SAMSUNG ELECTRONICS

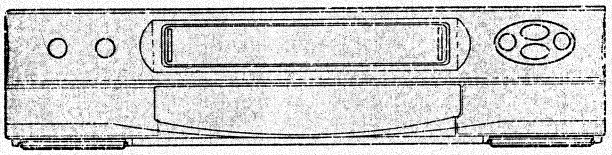
VHS PAL HQ

SERVICE MANUAL

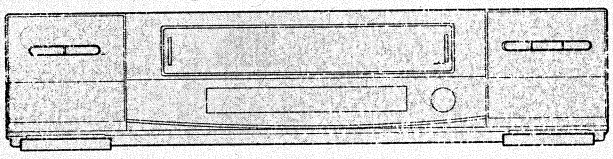
SVM-P13-043-1E
68139 - 132 - 143

MODEL : VXK-306/336
VXK-307/337

VIDEO CASSETTE RECORDER



VXK-306/336



VXK-307/337

SPECIFICATIONS

Format :	VHS PAL standard
Video Recording System :	VXK-306/307 ; 2 Rotary Heads VXK-336/337 ; Double Azimuth 4 Rotary Heads Luminance ; FM Azimuth recording Color ; Down converted subcarrier phase shifted direct recording
Television System :	CCIR standard (B/G System)
Tape Width :	12.65 mm (1/2 inch)
Tape Speed :	SP : 23.39 mm/sec LP : 11.69 mm/sec
Recording/Playback Time :	SP : 240 min with E-240 type LP : 480 min with E-240 type
FF/REW Time :	Less than 5 min in REW, Less than 5 min 30 sec in FF with E-180
Heads :	Video ; VXK-306/307 ; 2 Rotary Heads VXK-336/337 ; Double Azimuth 4 Rotary Heads Audio/Control ; 1 stationary head Erase ; 1 full track erase
VIDEO	
Input :	0.5 to 2.0 Vp-p , 75 ohm unbalanced
Output :	1.0 Vp-p ; 75 ohm unbalanced
Signal-to-Noise Ratio :	Better than 43 dB (SP), Better than 40 dB (LP)
Horizontal Resolution :	More than 240 lines (SP) More than 220 lines (LP)

AUDIO	
Input :	Line ; -8 dBm, 50 Kohm unbalanced
Output :	Line ; -4±3dBm, 1 Kohm unbalanced
Wow-Flutter (WTD) :	0.4 % Max (SP) 1.2% Max (LP)
Signal-Noise Ratio :	40 dB Min (IHF-A FILTER)
Frequency Response :	100Hz ~ 8KHz (SP) 100Hz ~ 5KHz (LP)
Receiving Channel :	VHF LOW, VHF HIGH,UHF
Power Requirement :	230V (AC 50/60Hz)
Power Consumption :	Approx. 20 watts
Operation Temperature :	41 ° F ~ 104 ° F (5 ° C ~ 40 ° C)
Operation Humidity :	10 % ~ 75 %
Weight :	5 Kg
Dimensions :	398 (W) x 87.5 (H) x 314 (D) mm

Printed in Korea

NOV. 1993

IMPORTANT SERVICE NOTICE

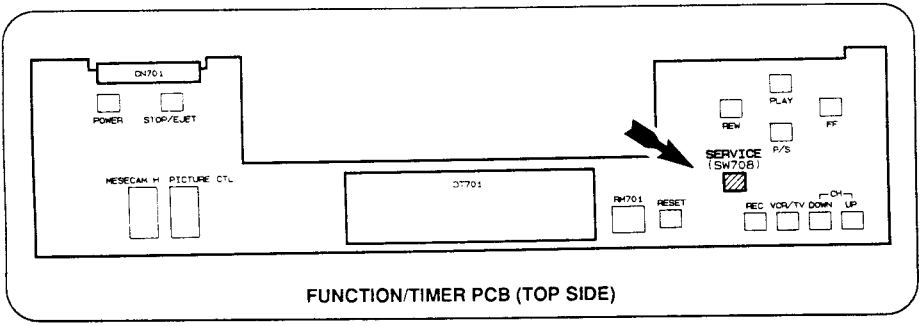
1. Service Option

For this chassis of VCR, the sensor (start / end / reel) are located on the Main PCB not in the deck assembly.
There is a important service option that has to be followed to repair Main PCB without "deck assembly" connected.
To imitate the function of the sensor, push the "**SERVICE**" key (SW708) on the Function/Timer PCB.
See diagram below.

NOTE

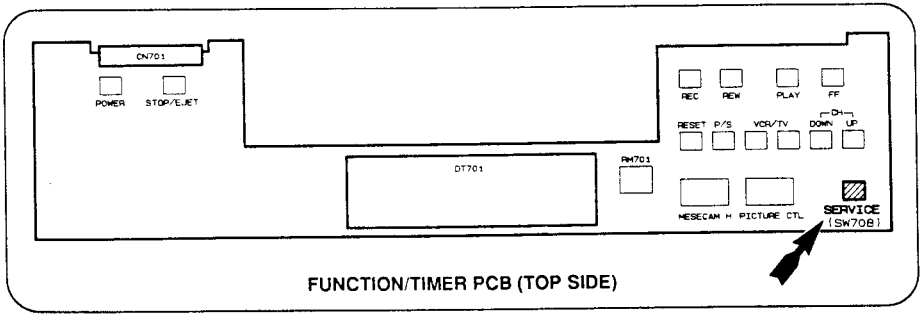
After connecting extension cable 4 between deck assembly and Main PCB, to make a cassette load, cover start sensor, then press and hold a cassette in the housing assembly.

VXK-306/336



FUNCTION/TIMER PCB (TOP SIDE)

VXK-307/337



FUNCTION/TIMER PCB (TOP SIDE)

NOTE

To release the imitated function of sensor, push the "**RESET**" key on the Function/Timer PCB or unplug the AC power cord and plug it again.

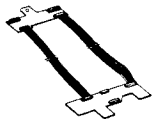
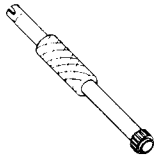
2. How to use the Service Jig

To have extended service ability for this unit, you must purchase the "Service Jig for X-3 Chassis VCR".

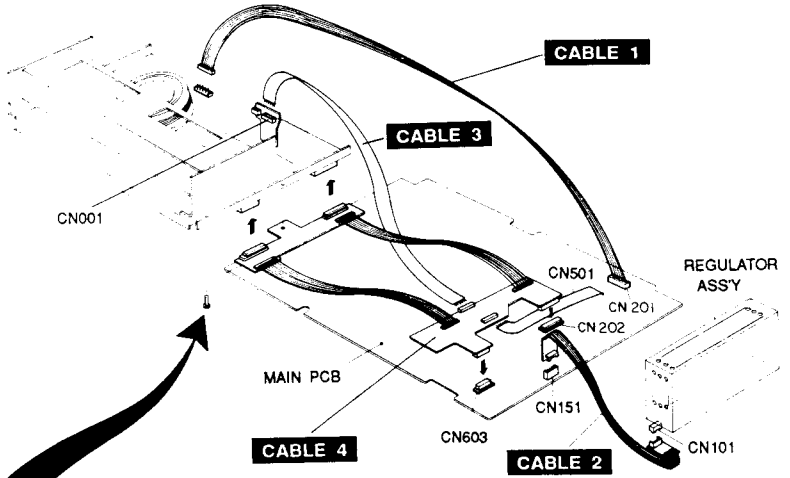
NOTE

This service jig can be used for several models of Samsung VCR's.
Please keep it for future use.

Jig Item	Code NO.	Description	Sketch NO.
Extension			
Cable 1	68140-300-103	Use for Cylinder Motor ↔ Main PCB (CN201) Connecting Cable	A
Cable 2	68140-300-105	Use for Regulator (CN101) ↔ Main PCB (CN151) Connecting Cable	B
Cable 3	68140-300-106	Use for A/C Head (CN001) ↔ Extension Cable 4 Connecting Cable	C
Cable 4	68140-300-107	Use for Deck ↔ Main PCB (CN202, CN603) Connecting Cable	D
Special Driver	68140-500-100	Use for X-Point Adjust / Tape path Alignment	E

A : CABLE 1	B : CABLE 2	C : CABLE 3	D : CABLE 4	E : SPECIAL DRIVER
				

3. Extension Cable Connections



NOTE

Remove one (1) screw from the eject drive gear and connect extension cable, and install the screw again.

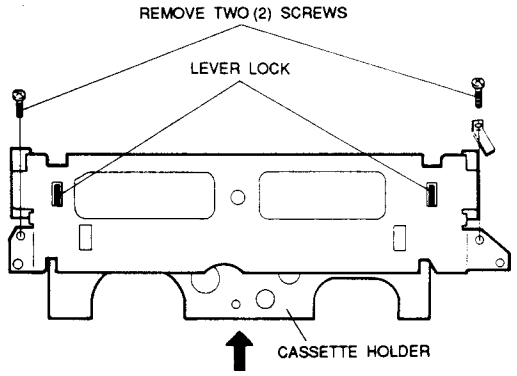
4. How to operate the VCR without a cassette tape

NOTE

First, push the **"SERVICE"** key (SW708) on the Function/Timer PCB.

Method 1 : Press the top of the lever lock (L) and (R) simultaneously, then push the cassette holder.
All function will work in this mode.

Method 2 : Remove two (2) screws securing the upper chassis, then lift up the upper chassis. Push the cassette holder.
All function will work in this mode.



CONTENTS

1. GENERAL DESCRIPTION

1-1. Safety Precautions 1-1
1-2. Electrostatically Sensitive (ES) Devices 1-2
1-3. General Information 1-3
1-4. Replacement Procedure for Leadless (Chip) Component 1-4
1-5. How to Read Leadless (Chip) Component Value 1-6
1-6. Cleaning and Lubrication 1-8
1-7. Abbreviations 1-9

2. DISASSEMBLY

2-1. Instrument Disassembly 2-1
2-2. Circuit Board Disassembly 2-2
2-3. Tape Transport Mechanism Identification 2-4
2-4. Housing Ass'y Removal & Reassembly 2-6
2-5. Cylinder Ass'y Removal & Reassembly 2-10
2-6. Reel Disk Ass'y Removal 2-14
2-7. Loading & Capstan Motor Ass'y Removal & Reassembly 2-17
2-8. Tape Transport Ass'y Removal 2-23

3. MECHANICAL ADJUSTMENT

3-1. Tape Transport System 3-1
3-2. Reel Torque 3-6

4. ELECTRICAL ADJUSTMENT

4-1. Preparation 4-1
4-2. Program Switch Timing Chart 4-2
4-3. Servo, Audio, Tuner & OSD Section 4-3
4-4. Video Section 4-4

5. ELECTRICAL PARTS LIST

5-1. General Information 5-1
5-2. Electrical Replacement Parts List 5-2

6. MECHANICAL EXPLODED VIEW/ PARTS LIST

6-1. Instrument Assembly 6-2
6-2. Mechanical Parts (1) ; Top View 6-4
6-3. Mechanical Parts (2) ; Bottom View 6-6
6-4. Housing Assembly 6-8

7. BLOCK DIAGRAMS

7-1. Total Wiring Diagram 7-2
7-2. Cylinder Phase Control 7-3
7-3. Cylinder Speed Control 7-3
7-4. Capstan Phase Control 7-4
7-5. Capstan Speed Control 7-4
7-6. Audio Playback Process 7-5
7-7. Audio Record Process 7-5
7-8. Luminance Playback Process (VXK-306/307).. 7-6
7-9. Luminance Playback Process (VXK-336/337).. 7-7
7-10. Luminance Record Process (VXK-306/307)... 7-8
7-11. Luminance Record Process (VXK-336/337)... 7-9
7-12. Chrominance Playback Process (VXK-306/307) 7-10
7-13. Chrominance Playback Process (VXK-336/337) 7-11
7-14. Chrominance Record Process (VXK-306/307) 7-12
7-15. Chrominance Record Process (VXK-336/337) 7-13

8. CIRCUIT BOARDS

8-1. Regulator 8-2
8-2. V.P.S 8-2
8-3. Pre-Amp (VXK-306/307) 8-3
8-4. Pre-Amp (VXK-336/337) 8-3
8-5. Main 8-4
8-6. Function/Timer (VXK-306/336) 8-5
8-7. Function/Timer (VXK-307/337) 8-5

9. SCHEMATIC DIAGRAMS

9-1. Regulator 9-2
9-2. Power 9-3
9-3. System Control 9-4
9-4. Servo 9-6
9-5. Luminance/Chrominance 9-8
9-6. Pre-Amp (VXK-306/307) 9-10
9-7. Pre-Amp (VXK-336/337) 9-12
9-8. Audio 9-14
9-9. Tuner 9-16
9-10. V.P.S (OPTION) 9-17
9-11. O.S.D 9-18
9-12. Function/Timer 9-20
9-13. Remote Control 9-21

1. GENERAL DESCRIPTION

1-1. SAFETY PRECAUTIONS

1. Before returning a Video Cassette Recorder to the customer, always make a safety check of the entire instrument, including, but not limited to the following items:

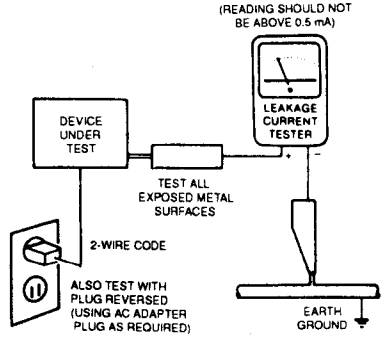
a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing.

(1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.

(2) When reassembling the instrument, be sure to put back in place all protective devices, including, but not limited to nonmetallic control knobs, insulating, fish papers adjustment and compartment covers/shields, and isolation resistor/capacitor networks.
Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contract a hazardous voltage. Such openings include, but are not limited to, (1) excessively wide cabinet ventilation slots, and (2) improperly fitted and/or incorrectly secured cabinet covers.

c. Antenna Cold Check-With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, to each of the coaxial connectors.


(READING SHOULD NOT BE ABOVE 0.5 mA)
LEAKAGE CURRENT TESTER
DEVICE UNDER TEST
TEST ALL EXPOSED METAL SURFACES
2-WIRE CODE
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUG AS REQUIRED)
EARTH GROUND

AC Leakage Test

If the measured resistance is less than 1.0 megaohm or greater than 5.2 megaohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. Leakage Current Hot Check-With the instrument completely reassembled plug the AC line cord directly into a 220 (240V-UK) AC outlet. (Do not use an isolation transformer during this test). Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, Measure for current from a known earth ground (metal waterpipe, conduit, etc) to all exposed metal parts of the instrument (antennas, handle bracket, metal , etc), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milliamp. Reverse the instrument power cord plug in the outlet and repeat test.

ANY MEASUREMENT NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR CONNECTING ANTENNA OR ACCESSORIES.

e. AC Leakage Test
Avoid shock hazards. The television instrument, accessory, or cables (s) to which this VCR (VCP) is connected should have the applicable sections of the leakage resistance antenna cold check and the leakage current hot check performed. Do not connect this VCR (VCP) to a TV antenna, cable or accessory that exhibits excessive leakage currents.

2. Read and comply with all caution and safety related notes on or inside the VCR (VCP) cabinet and chassis.

3. **Design Alteration Warning**-Do not alter or add to the mechanical or electrical design of this Video Cassette Recorder (Player). Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you,the servicer responsible for personal injury or property damage.

4. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a) near sharp edges, b) near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c) the AC supply, and d) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring between components and the printed circuit board.
Check AC power cord for damage.

5. Components, parts and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications, Additionally, determine the cause of overheaing and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

6. Product Safety Notice
Some electrical and mechanical parts have special safety related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage,wattage etc. Parts that have special safety characteristics are identified by a (*) or (⚠) on schematics and parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards.
Products safety is under review continuously and new instructions are issued whenever appropriate.

1-2. ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to appling power to the unit under test

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive foam, aluminum foil or comparable conductive material)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

IMPORTANT SAFETY NOTICES
Components identified with the mark ⚠ have the special characteristics for safety when replacing any of these components. Use only the same type.

1-3. GENERAL INFORMATION

• VISS (VHS Index Search System)
VISS is the function of searching swiftly to previously designated points of interest on the tape using the index signal.
- Index Search
This function fast forward or rewinds the tape to the point with the specified index signal, and starts playback from there automatically.
- Index Scan
This function fast forwards or rewinds the tape to the point with the first adjacent index signal, and starts playback 5 seconds before searching for the next index signal. This operating continues until all index signals have been found in the selected direction.

• SHUTTLE
During playback, each time press the SHUTTLE button, the picture speed will be changed as follows. Slow motion - Still -1 to -11 times speed. During playback, each time press the SHUTTLE button, the picture speed will be changed -11 times speed picture.

• MULTI ON-SCREEN DISPLAY
On-screen display system for timer programming and mode display. It is possible to select one among 4 languages ; German, Spanish, English, Italian.

• HYPER BAND TUNING
It is possible to tune the Hyper band channels.

• AUTOMATIC DIGITAL TRACKING
Adjusts the tracking automatically to obtain the best tracking position. When a cassette is inserted, the DIGITAL TRACKING will function until the tracking is set.

• Unattended (Timer) Recording
The programmable timer can be preselected up to one month in advance to record up to 4 preselected programs. (Normal program, daily program or weekly program)
The timer turns VCR on and off, and changes channels automatically.

• OTR (ONE TOUCH RECORDING)
It is possible to record up to 9 hours without programming the timer. It is also possible to start (continue) recording immediately.

• LTC (Linear TIME Counter)
This function resets the counter when front loading starts after inserting a tape. Linear time counter indicates the elapsed time of the tape running as second.

• Double Speed Playback
Pushing PLAY button again in the playback mode, picture search is performed 2 times as fast as normal playback.

• Frame Advance
This function can be advanced one by one frame by pushing P/S button.

• SLOW (Various Slow Motion Playback)
This is for adjustment of the slow speed operation in playback.

• Warp Search
It is possible to search the picture during rewinding or fast forward the tape.

• Q. PRO (Quick-Program)
The Quick- Program is a faster method of programming the recorder for timer recording.

Feature by model

Model	Head	Tape Speed	HYPER Band Tuning
VXK-306	2 H'd	SP	X
VXK-307	2 H'd	SP	X
VXK-336	4 H'd	SP / LP	O
VXK-337	4 H'd	SP / LP	O

1-4. REPLACEMENT PROCEDURE FOR LEADLESS (CHIP) COMPONENT

※ The following procedures are recommended for the replacement of the leadless components used in this unit.

1. Preparation for replacement

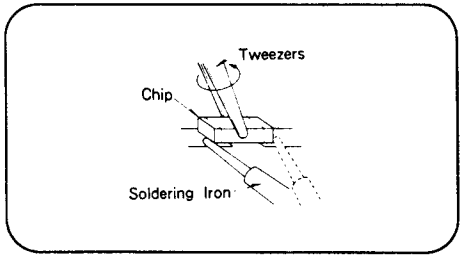
a. Soldering Iron
Use a pencil-type soldering iron that uses less than 30 watts.
b. Solder
Eutectic solder (Tin 63%, Lead 37%) is recommended.
c. Soldering time
Do not apply heat more than 4 seconds.
d. Preheating
Leadless capacitor must be preheated before installation. (130° C~150° C, for about two minutes).

Note :
a. Leadless component must not be reused after removal.
b. Excessive mechanical stress and rubbing of the component electrode must be avoided.

2. Removing the leadless component (Resistors, Capacitors)

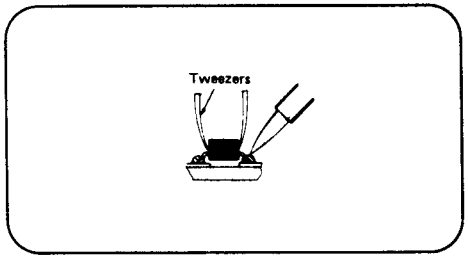
Grasp the leadless component body with tweezers and alternately apply heat to both electrodes. When the solder on both electrodes is melted, remove leadless component with a twisting motion.

Note :
a. Do not attempt to lift the component off the board until the component is completely disconnected from the board by a twising action.
b. Take care not to break the copper foil on printed board.

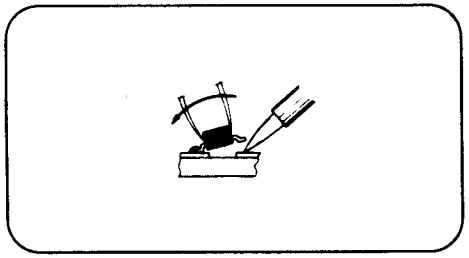


3. Removing the chip component (Transistors, Diodes)

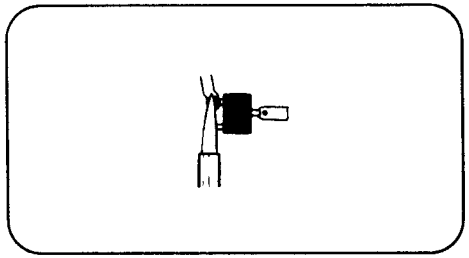
1) Melt the solder of one lead.



2) Lift the side of that lead upward.

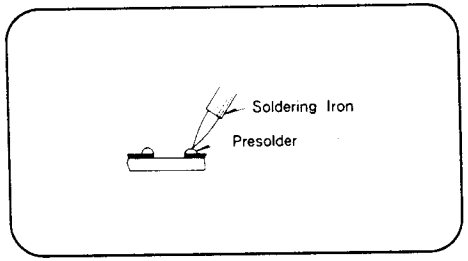


3) Simultaneously heat solder of the two remaining leads and lift part to remove.



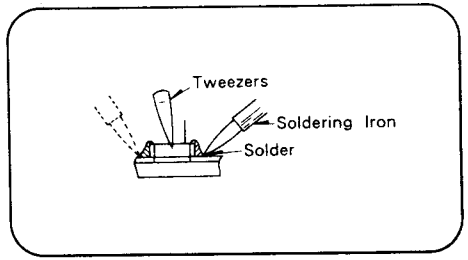
4. Installing the Leadless (chip) Component

1) Presolder the contact points of the circuit board.



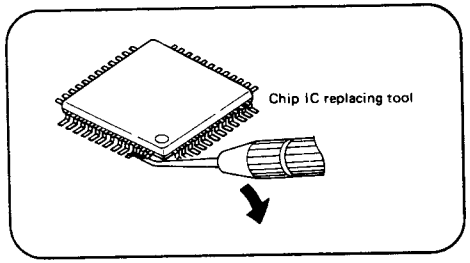
2) Press the part downward with tweezers and solder both electrodes as shown below.

Note :
Do not glue the replacement leadless component to the circuit board.



5. Removing of Flate ICs
(Recommendable manner)

1) For removing solder chips from IC's pins, use a solder remover or a wiry solder absorber.
2) Heat the IC's tips evenly by moving the chip IC replacing tool around them, and detach the IC's leads with a tool in the way of using a lever.
3) Do not reuse ICs removed once (Discard them).



1-5. HOW TO READ LEADLESS (CHIP) COMPONENT VALUE

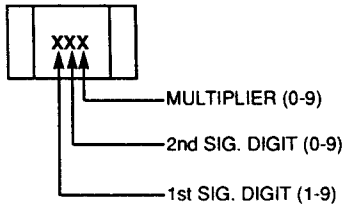
1. Check the followings before S.M.D Troubleshooting

* Cracked or Chipped Component Body
* Cracked or Separated Solder Joints
* Peeling end Terminations or Fractured Leads
* Rejection of Solder from Copper Pads or Component
* Foreign Matter on Copper Pads
* Solder Bridges

2. S.M.D (Surface Mounted Devices) Identification

1) Chip Resistor Identification

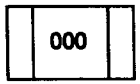
※ Standard Chip Resistor Code



Examples

= 12 x 10^3(1000) = 12000 Ω
= 12KΩ

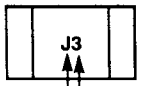
= 47 x 10^0 (1) = 47 Ω



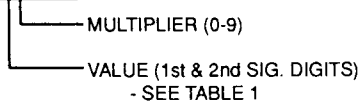
= CHIP JUMPER = 0 Ω

2) Chip Capacitor Identification

※ Standard Two Place Code



= 2.2 x 10^3 (1000)
= 2200 pF



Examples

S2 = 4.7 x 100 = 470 pF

b0 = 3.5 x 1.0 = 3.5 pF

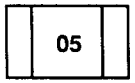
Note : Ceramic chip capacitor is no marking.

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 2.0	b — 3.5	f — 5.0	X — 7.5	0 = x 1.0
B — 1.1	J — 2.2	p — 3.6	T — 5.1	t — 8.0	1 = x 10
C — 1.2	K — 2.4	Q — 3.9	U — 5.6	Y — 8.2	2 = x 100
D — 1.3	a — 2.5	d — 4.0	m — 6.0	y — 9.0	3 = x 1000
E — 1.5	L — 2.7	R — 4.3	V — 6.2	Z — 9.1	4 = x 10000
F — 1.6	M — 3.0	e — 4.5	W — 6.8		5 = x 100000 etc.
G — 1.8	N — 3.3	S — 4.7	n — 7.0		

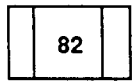
----- TABLE 1 -----

※ Alternate Two Place Code

• Values below 100 pF - Value Read Directly

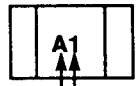


= 5 pF

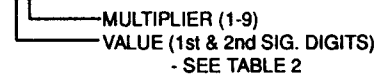


= 82 pF

• Values 100 pF and above - Letter / Number Code



= 10 x 10
= 100 pF

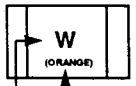


= 33 x 1000
= 33000 pF
= 0.33 uF

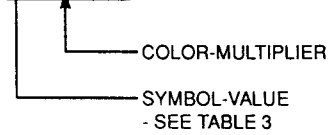
VALUE (24 VALUE SYMBOLS) - UPPERCASE LETTERS ONLY					MULTIPLIER
A — 10	F — 16	L — 27	R — 43	W — 68	1 = x 10
B — 11	G — 18	M — 30	S — 47	X — 75	2 = x 100
C — 12	H — 20	N — 33	T — 51	Y — 82	3 = x 1000
D — 13	J — 22	P — 36	U — 56	Z — 91	4 = x 10000
E — 15	K — 24	Q — 39	V — 62		5 = x 100000 etc.

----- TABLE 2 -----

※ Standard Single Place Code



= 4.7 x 1.0=4.7 pF



Examples

R (Green) = 3.3 x 100 = 330 pF

7 (Blue) = 8.2 x 1000 = 8200 pF

VALUE (33 VALUE SYMBOLS) - UPPER AND LOWER CASE LETTERS					MULTIPLIER
A — 1.0	H — 1.6	N — 2.7	V — 4.3	3 — 6.8	ORANGE = x 1.0
B — 1.1	I — 1.8	O — 3.0	W — 4.7	4 — 7.5	BLACK = x 10
C — 1.2	J — 2.0	R — 3.3	X — 5.1	7 — 8.2	GREEN = x 100
D — 1.3	K — 2.2	S — 3.6	Y — 5.6	9 — 9.1	BLUE = x 1000
E — 1.5	L — 2.4	T — 3.9	Z — 6.2		VIOLET = x 10000
					RED = x 100000

----- TABLE 3 -----

1-6. CLEANING AND LUBRICATION

1-6-1. CLEANING TAPE MECHANISM

Periodic cleaning is necessary to insure continued excellent performance of the tape mechanism. To clean the following parts, patch and solvent are available.

1. Capstan shaft.
2. All tape guide posts.
3. Clitch pulley.
4. Pinch roller.
5. Belt capstan.
6. Capstan motor pulley.

1-6-2. CLEANING OF ROTATING & STATIONARY HEADS

To clean video heads, full erase head, audio/control (A/C) head we recommend to use head cleaning kit and solvent.

> Note : When cleaning video heads, move the cleaning stick in the direction of head rotation. Wiping in a vertical direction may damage the heads.

Press a chamois cloth which has been dipped in cleaning fluid lightly against the rotating cylinder assembly, then do the cleaning by slowly rotaing upper cylinder ass'y by hand.

> Note : Never try to clean by using the motor to turn the cylinder ass'y.

1-6-3. LUBRICATING TAPE MECHANISM

The tape transport mechanism is properly lubricated at the factory.
In normal use cycles, and with average environmental conditions, additional lubrication should not be required during the first year of operation.

Depending on the frequency of use and environmental conditions, periodic lubrication may be required.
When relubricating, remove old lubricant first, then sparingly apply new lubricant.(Excessive lubricant may be transferred to other assemblies causing malfunction).

Use grease on the following parts every 1,000 hours of operations. (See exploded view for location)

1. Between base pole assembly (L, R) and main base.
2. Gear escalator.
3. Gear E/J drive.
4. Gear loading L, R.
5. Slide main.
6. Lever tension control.
7. Lever shift.

Oil may be required for the following parts after 1,000 hours of operation.(See exploded view for location)

Main base
1. Arm tension molding.
2. Shaft reel disk L, R molding.
3. Shaft gear relay T, S1, S2, S3 molding.
4. Shaft clutch.
5. Shaft gear review.

Other parts which are not listed above do not require lubrication, except when parts are replaced.
Use appropriate oil or grease as indicated on exploded view.

1-7. ABBREVIATIONS

X2	: Double
4.43MHz	: Color Sub Carrier
ACC	: Automatic Color Circuit
ACK	: Automatic Color Killer
ADD	: Adder
AFC	: Automatic Frequency Control
AFT	: Automatic Fine Tuning
AGC	: Automatic Gain Control
ALC	: Automatic Level Control
AMP	: Amplifier
APC	: Automatic Phase Control
AUX	: Auxiliary
BATT	: Battery
BD	: Burst Deemphasis
BE	: Burst Emphasis
BH	: Power Supply for Selecting VHF High Band
BL	: Power Supply for Selecting VHF Low Band
BPF	: Band Pass Filter
C.FG	: Capstan Frequency Generator
C.SYNC	: Composite Sync
CAFC	: Capstan Auto Frequency Control
CAPC	: Capstan Auto Phase Control
CATV	: Cable TV
CAR	: Carrier
CAP	: Capstan
CCD	: Charge Coupled Device
CH	: Channel
CHAR.	: Character
CHROMA	: Chrominance
CM	: Capstan Motor
COMP	: Comparator
CST	: Cassette
C-ERR	: Capstan Error
CTL	: Control
C.PG	: Capstan Pulse Generator
CUR.EMPH	: Current Emphasis
D.FG	: Drum Frequency Generator
D.O.C	: Drop Out Compensator
D.PG	: Drum Pulse Generator
D/A	: Digital-to-Analog
D/C	: Dark/Clip
D.AFC	: Drum Auto Frequency Control
D.APC	: Drum Auto Phase Control
DE-EMPH	: De-Emphasis
DET	: Detector
DEV	: Deviation
DLYD	: Delayed
DM	: Drum Motor
DEMOD	: Demodulator
D.D	: Direct Drive
E-E	: Electronic-to Electronic
EMPH	: Emphasis
ENV	: Envelope
EQ	: Equalizer
EPS	: Easy Programming System
F.ADV	: Frame Advance
F-V	: Frequency to Voltage Converter
F.FWD	: Fast Forward
FH	: Frequency Horizontal
FG	: Frequency Generator
FM	: Frequency Modulator
FSC	: Frequency Sub Carrier
FWD	: Forward
FC	: Frequency Center
FL	: Frequency Low
GEN	: Generator
GND	: Ground
HPF	: High Pass Filter
IF	: Intermediate Frequency
IR	: Infrared Receiver
LED	: Light Emitting Diode
LIM	: Limiter
LPF	: Low Pass Filter
LUMA	: Luminance
LCD	: Liquid Crystal Display
LNR	: Linear
MIX	: Mixer
MM	: Monostable Multivibrator
MTS	: Multi Channel TV Sound
MEM	: Memory
MFT	: Manual Fine Tuning
N.C	: No Connection

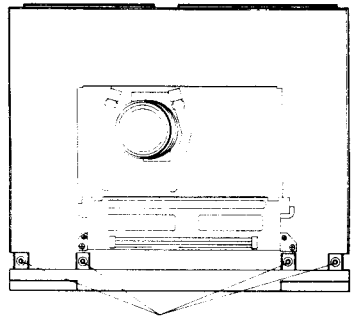
OSC	: Oscillator
OTR	: One Touch Recording
OSP	: On Screen Programme
OSD	: On Screen Display
PB	: Play Back
P.C	: Power Control
PG	: Pulse Generator
PIF	: Picture Intermediate Frequency
PLL	: Phase Lock Loop
PRG	: Programme
PWM	: Pulse Width Modulation
PWR	: Power
P/S	: Pause/Still
PD	: Power Detector
Q.PRO	: Quick-Program
REG	: Regulator
REC	: Record
REC.SAF	: Record Safety
REW	: Rewind
RF	: Radio Frequency
REV	: Reverse
RECT	: Rectifier
REF	: Reference
SC	: Simul-Cast
SC	: Sub-Carrier
SCK	: Shift Clock
SDA	: Serial Data
SIF	: Sound Intermediate Frequency
S.M.D	: Surface Mounted Devices
S.M.P.S	: Switching Mode Power Supply
SP	: Standard Play
SW25Hz	: Head Switching Pulse
SYNC	: Synchronizing Signal
SYSCON	: System Control
STB	: Strobe
SI	: Serial Input
SO	: Serial Output
SW	: Switch
TP	: Test Point
TRK	: Tracking
UL	: Unloading
VT	: Voltage Tuning
VLP	: Vertical Lock Pulse
V-REF	: Voltage Reference
V-SYNC	: Vertical Sync
VCO	: Voltage Controlled Oscillator
VCR	: Video Cassette Recorder
VIF	: Video Intermediate Frequency
VPS	: Video Programming System
VHS	: Video Home System
VXO	: Voltage Controlled Crystal Oscillator
VSS	: Voltage Super Source
VISS	: VHS Index Search System
W/C	: White /Clip
W/D	: White/Dark
Y/C	: Luminance/Chrominance
uP	: Microprocessor

2. DISASSEMBLY

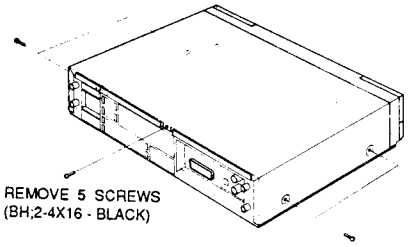
2-1. INSTRUMENT DISASSEMBLY

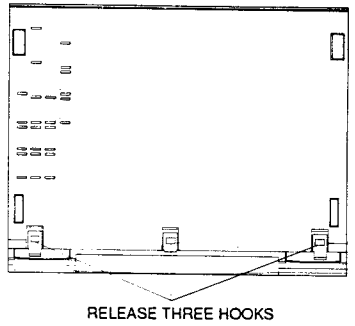
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in reverse order.

2-1-3. Front Panel Removal

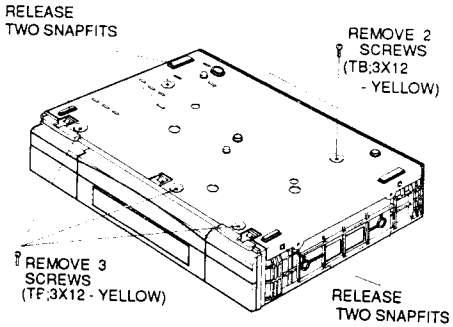


2-1-1. Top Cabinet Removal





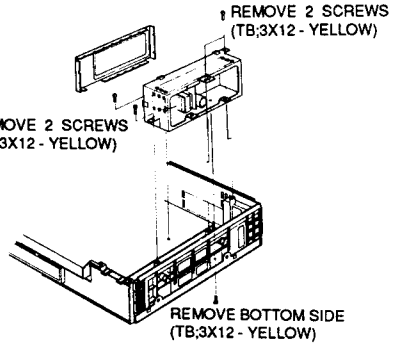
2-1-2. Bottom Cover Removal



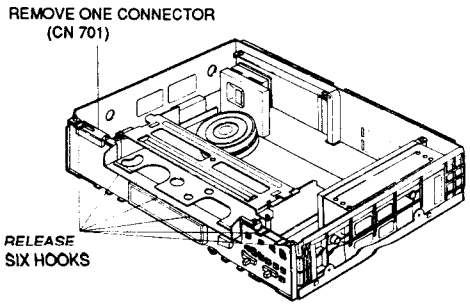
2-2. CIRCUIT BOARD DISASSEMBLY

Note :
1. When removing chassis unit assembly, take extreme care not to damage the Main PCB front.
2. When reinstalling Deck on the Main PCB, take extreme care not to damage sensor.

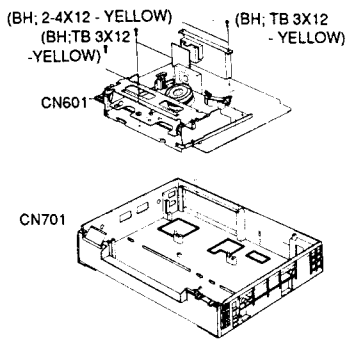
2-2-1. Regulator Ass'y Removal



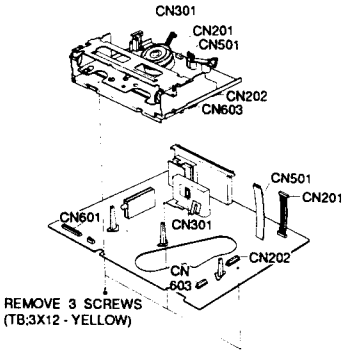
2-2-2. Function/Timer Circuit Board Removal



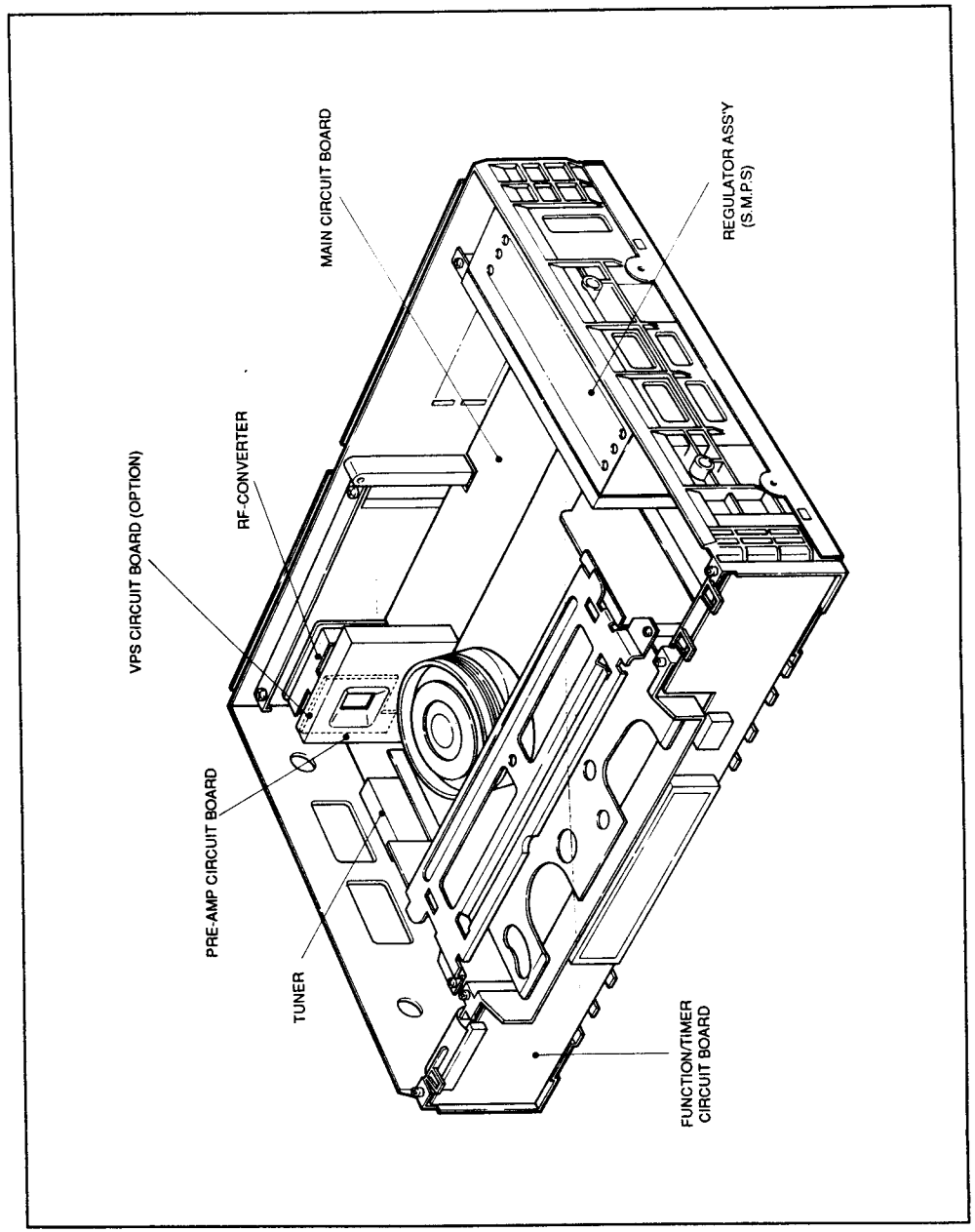
2-2-3. Chassis Unit Removal



2-2-4. Main Circuit Board Removal



* Circuit Boards Location



2-3. TAPE TRANSPORT MECHANISM IDENTIFICATION

2-3-1. Top View

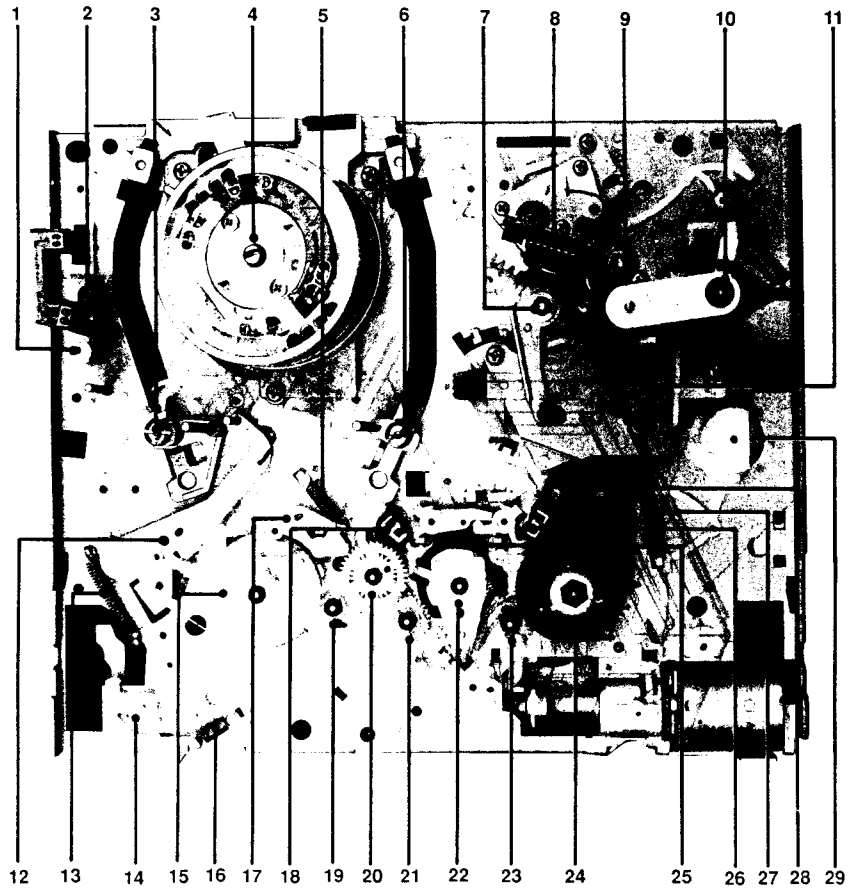


Fig. 1 Tape Transport Mechanism - Top View

1. SUPPLY ROLLER
2. F/E HEAD ASS'Y
3. P.B & G.R (L)
4. CYLINDER ASS'Y
5. S/P BRAKE SUB "L"
6. P.B & G.R (R)
7. REVIEW ARM ASS'Y
8. A/C HEAD ASS'Y
9. CAPSTAN SHAFT
10. PINCH ROLLER UNIT
11. UNIT DRIVE PINCH
12. ARM TENSION ASS'Y
13. SPRING TENSION
14. LEVER REC S/W
15. REEL DISK "L"
16. S/P RECORD S/W
17. BRAKE SUB "L"
18. BRAKE MAIN "L" ASS'Y
19. GEAR RELAY S3
20. GEAR RELAY S2
21. GEAR RELAY S1
22. IDLER SUB ASS'Y
23. GEAR RELAY "T"
24. REEL DISK "R"
25. S/P BRAKE MAIN
26. BRAKE MAIN "R" ASS'Y
27. S/P BRAKE SUB "R"
28. BRAKE SUB "R" ASS'Y
29. GEAR EJECT DRIVE

2-3-2. Bottom View

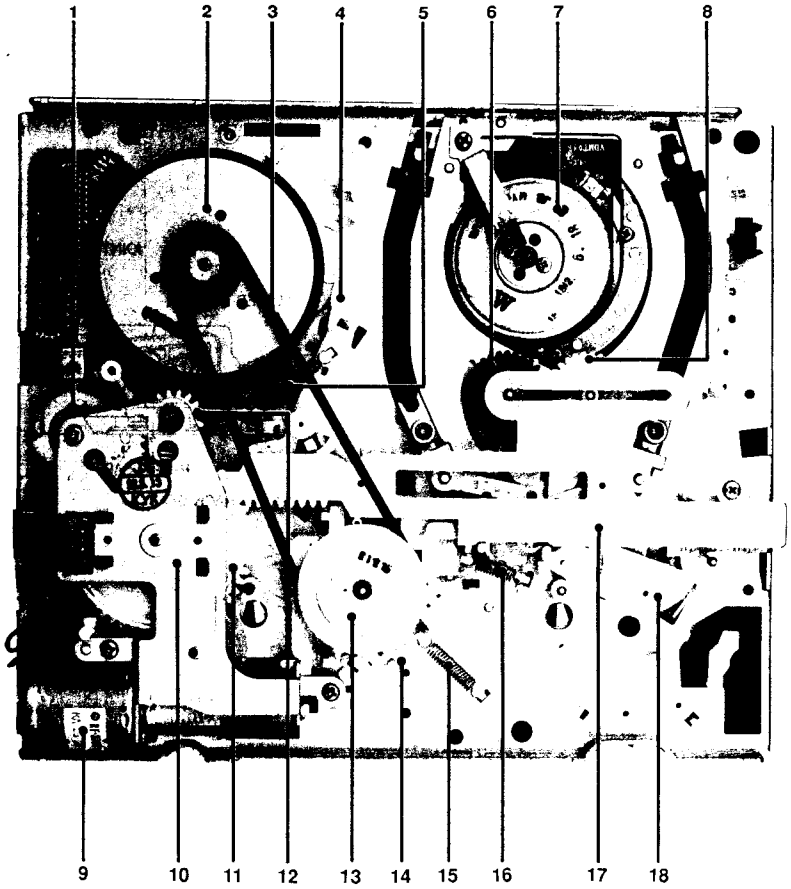


Fig. 2 Tape Transport Mechanism - Bottom View

1. GEAR EJECT DRIVE
2. MOTOR D/D CAPSTAN
3. BELT CAPSTAN
4. BRAKE D/D CAPSTAN
5. S/P BRAKE CAPSTAN
6. GEAR LOADING "R"
7. CYLINDER MOTOR
8. GEAR LOADING "L"
9. MOTOR LOADING
10. LOADING UNIT ASS'Y
11. GEAR MASTER
12. GEAR RELAY PINCH
13. CLUTCH ASS'Y
14. LEVER SHIFT
15. S/P BRAKE SUB "R"
16. S/P RELEASE BRAKE
17. SLIDE MAIN
18. LEVER TENSION CONTROL

2-4. HOUSING ASS'Y REMOVAL & REASSEMBLY

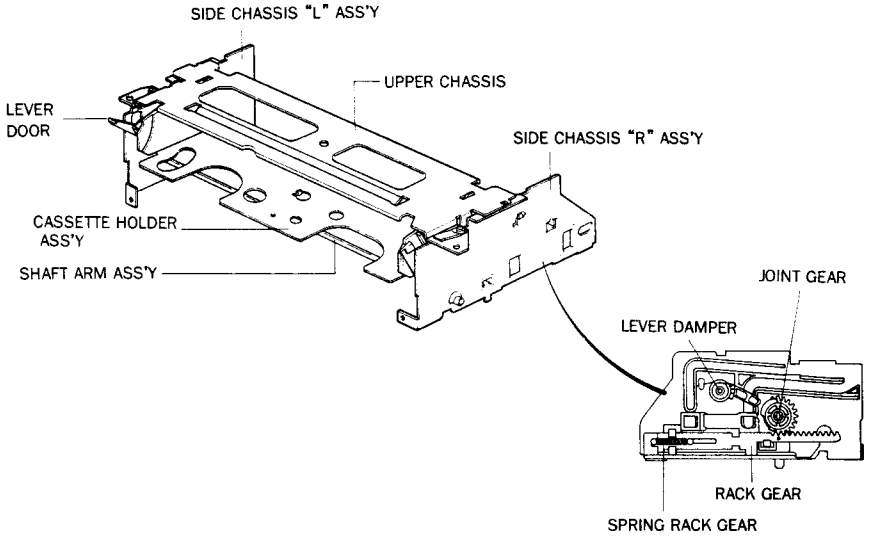


Fig. 3 Housing Ass'y Identification

2-4-1. Housing Ass'y Removal

1. Remove four (4) screws ①, ②.
2. Lift up the housing ass'y in the direction of arrow.

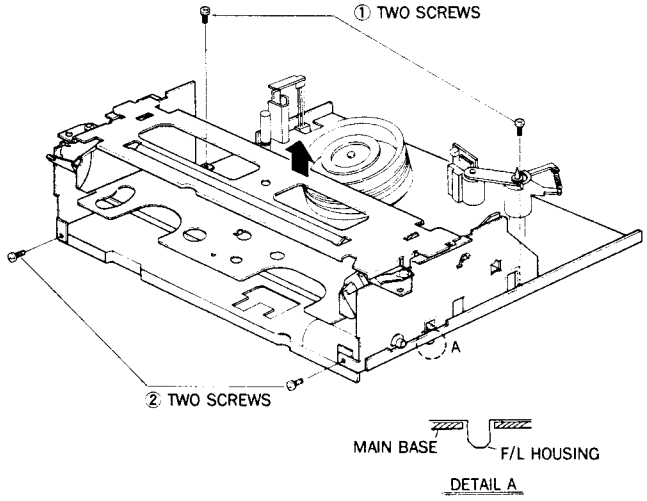


Fig. 4 Housing Ass'y Removal

2-4-2. Cassette Holder Ass'y & Side Chassis "L", "R" Removal

1. Remove two (2) screws ①.
2. Lift up the upper chassis ② and the cassette holder ass'y ③ in the direction of arrow (A).
3. Remove the side chassis "L", "R" ④, ⑤ from the shaft arm ass'y in the direction of arrows (B).

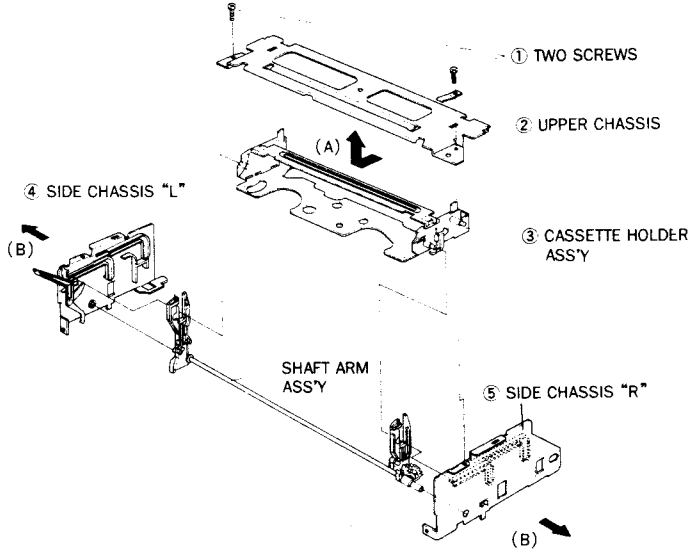


Fig. 5 Cassette Holder Ass'y & Side Chassis "L", "R" Removal

2-4-3. Joint Gear & Rack Gear Removal

1. Pull the rack gear ① in the direction of arrow (A) to the end.
2. Remove one screw ② and then the joint gear ③.
3. Remove the rack gear ① toward arrow (B).

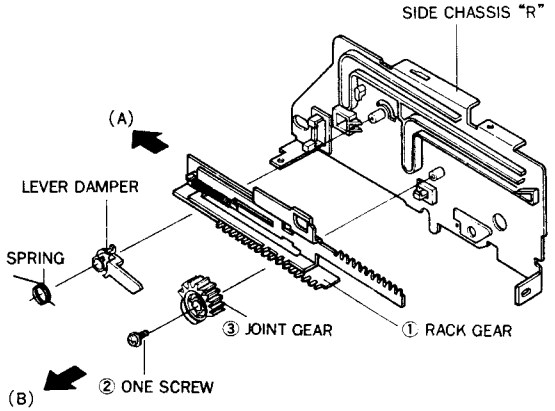


Fig. 6 Joint Gear & Rack Gear Removal

2-4-4. Reinstallation of Rack Gear and Joint Gear

Reinstallation and Timing of Rack Gear and Joint Gear

1. Assemble the rack gear ① to the side chassis "R".
2. Pull the rack gear ① in the direction of arrow to the end.
3. Install the joint gear so that the slot #1 of joint gear ② is aligned with the tooth #1 of rack gear ①.
4. Tighten one (1) screw with the joint gear.

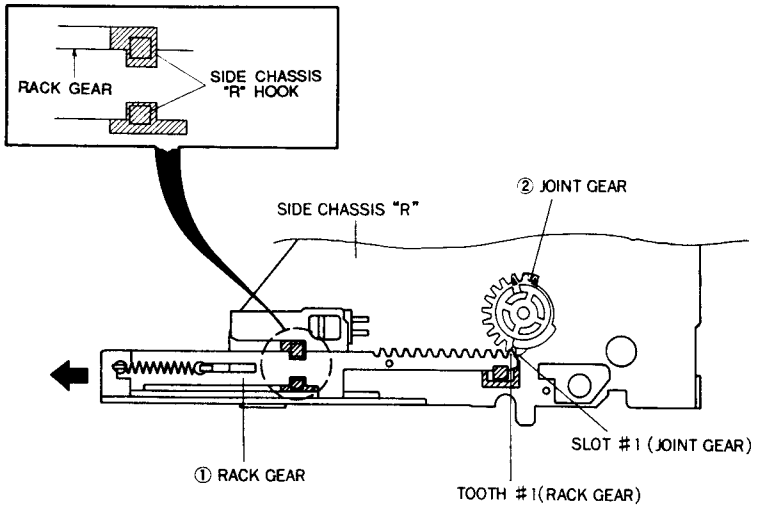


Fig. 7 Reinstallation and Timing of Rack Gear and Joint Gear

Timing Confirmation of Rack Gear and Joint Gear (Eject mode)

1. Push the rack gear ① in the direction of arrow to the end.
2. Make sure that the tooth #12 (arrow mark) of joint gear ② and the Timing Point of rack gear ① are aligned correctly as shown in Fig. 8.

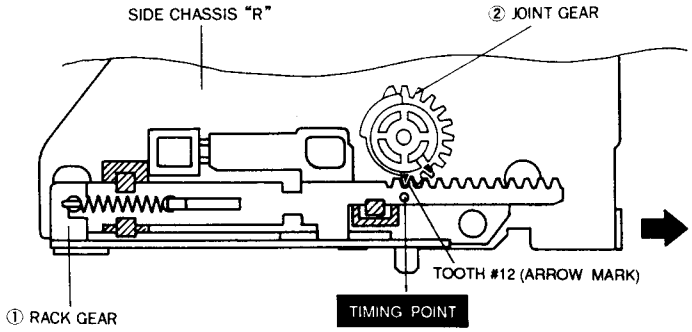


Fig. 8 Timing Confirmation of Rack Gear and Joint Gear

2-4-5. Reassembly of Housing Ass'y

1. After pushing the rack gear in direction of arrow to the end, insert the pin of the arm gear into the hole of side chassis "R".
2. Align the slot #1 of the arm gear ① with the tooth #3 of the joint gear ②.(Refer to timing in Fig. 9)
3. Install the side chassis "L" so that the shaft arm pin goes into the hole in the side chassis "L".
4. Turn the shaft arm to up-position and drop the cassette holder into the arm grooves.
5. Install the upper chassis and secure with two (2) screws.

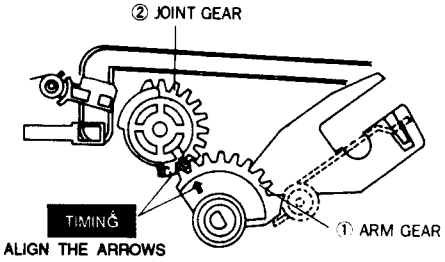


Fig. 9 Reassembly Joint Gear & Arm Gear

2-4-6. Reinstallation of Housing Ass'y & Deck Ass'y

Note : Make sure deck is in the eject position.

1. Assemble the housing ass'y while pushing the rack gear forward to align the slot #1 of gear eject drive ② and the tooth #1 of rack gear ①. (Refer to Detail A)
2. Install the housing ass'y and then tighten four (4) screws. (See Fig. 4)

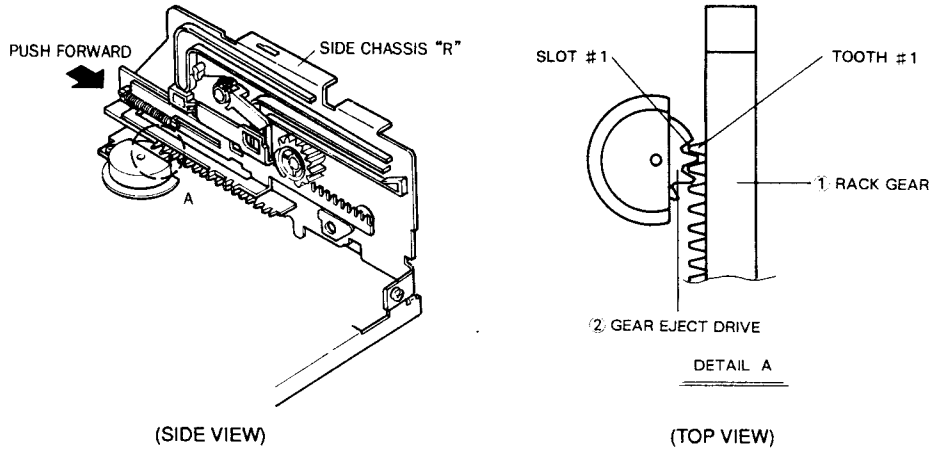


Fig. 10 Reinstallation of Housing Ass'y

2-5. CYLINDER ASS'Y REMOVAL & REASSEMBLY

2-5-1. Cylinder Ass'y Removal from Main Base

1. Release the F.P.C cable ① from Pre-Amp PCB (CN301) and disconnect the lead connector ass'y ② from the cylinder PCB.
2. Remove three (3) screws ③ securing the base cylinder and the main base.
3. Lift the cylinder ass'y ④ in the direction of arrow.

CAUTION : Take extreme care when removing the cylinder ass'y. Do not touch the video head tips during servicing.

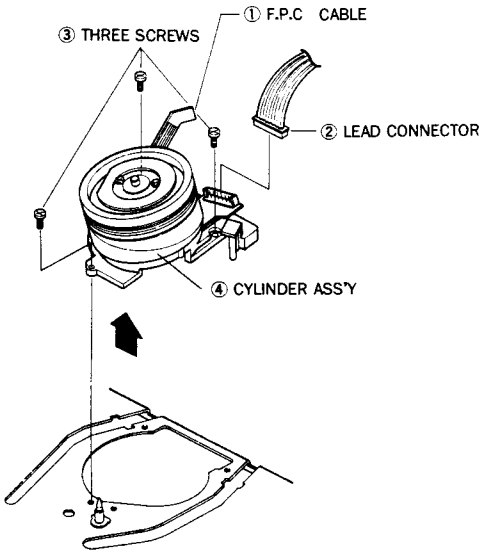


Fig. 11 Cylinder Ass'y Removal

2-5-2. Exploded View of Cylinder Ass'y

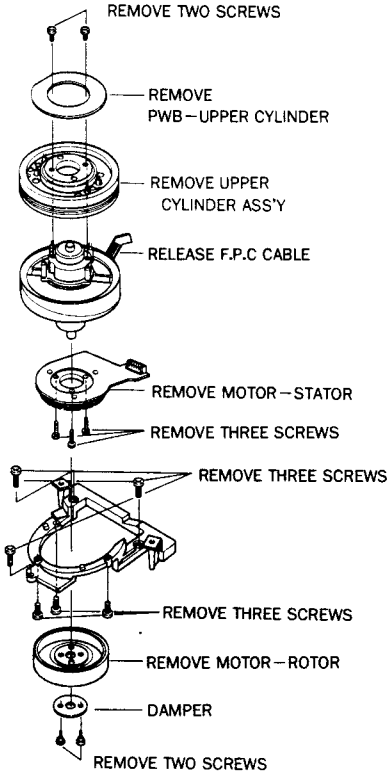


Fig. 12 Exploded View of Cylinder Ass'y

2-5-3. Upper Cylinder Ass'y Removal

1. Remove two (2) screws ① from the upper cylinder ass'y ③.
2. Unsolder the PWB-Upper cylinder ② from the upper cylinder ass'y ③ and remove the upper cylinder ass'y ③ from the cylinder ass'y. (See Fig. 14)

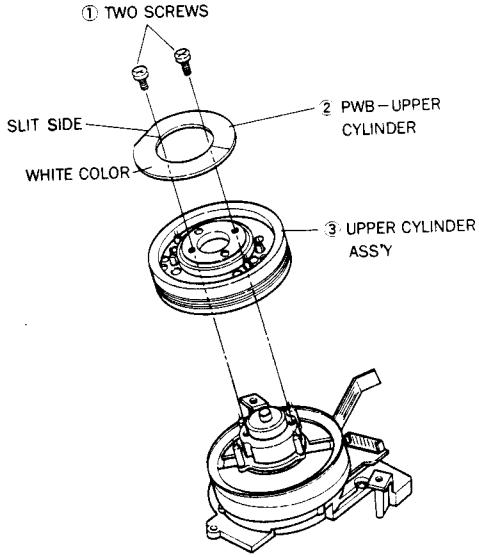
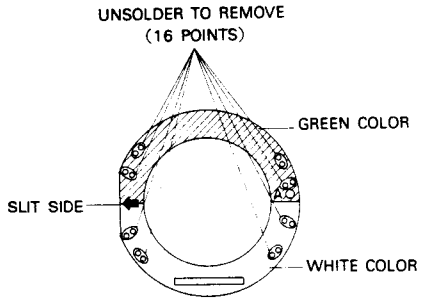
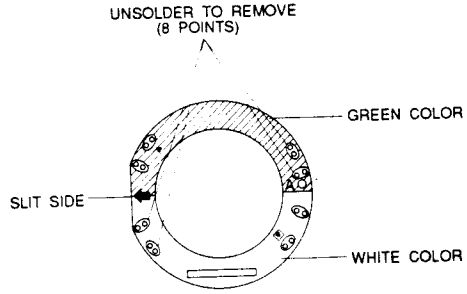


Fig. 13 Upper Cylinder Ass'y Removal



4 HEAD



2 HEAD

Fig. 14 PWB Upper Cylinder Top View

2-5-4. Lower Cylinder Ass'y Removal

1. Remove three (3) screws ① from the base cylinder ②.
2. Lift up the lower cylinder ass'y ③ from the base cylinder ②.

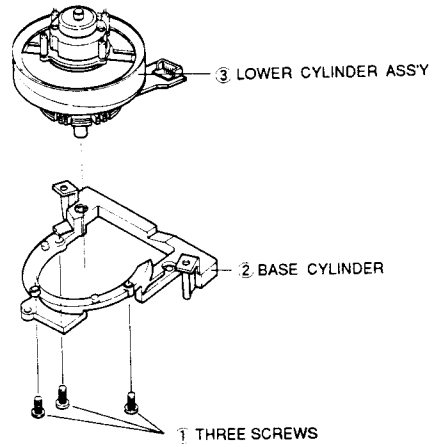


Fig. 15 Lower Cylinder Ass'y Removal

2-5-5. Cylinder Motor Removal

1. Remove three (3) screws ① from the base cylinder ②.
2. Remove two (2) screws ③ from the damper ④,then remove the damper ④ and the motor-rotor ⑤.
3. Remove three (3) screws ⑥ from the motor-stator ⑦ and take it out.

Note : Mark rotor position to insure correct phase orientation upon reinstallation.

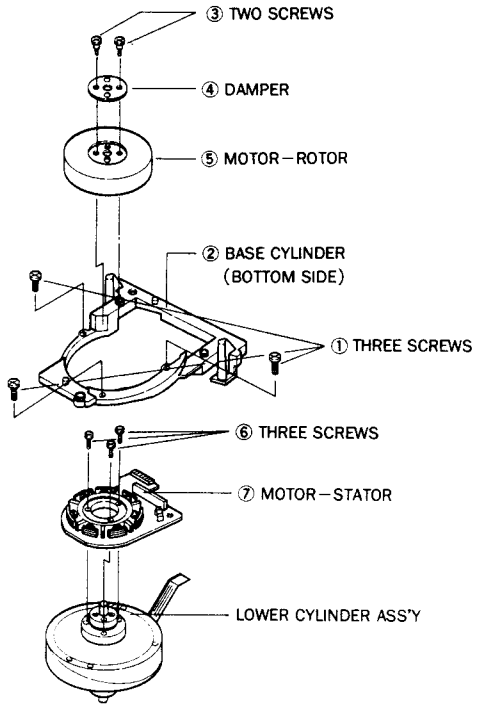


Fig. 16 Cylinder Motor Removal

2-5-6. Assembly of Lower Cylinder

1. Tighten three (3) screws with the motor-stator. (Refer to Fig. 16)
2. Reinstall the motor-rotor, damper and secure with two (2) screws. (Refer to Fig. 16)

Note : Make sure that the hole of bush cylinder on lower cylinder and the hole of motor rotor are aligned correctly as shown in Fig. 17.

3. Reinstall the lower cylinder to the base cylinder and secure with three (3) screws.

Note : Align two (2) base cylinder pin before reinstalling.

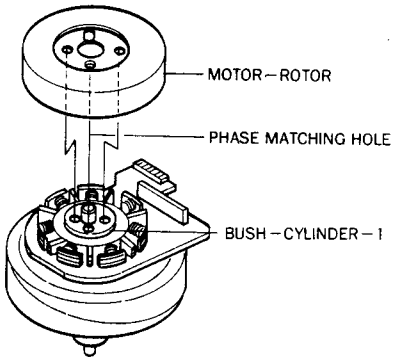


Fig. 17 Bush Cylinder -1 & Motor Rotor Timing

2-5-7. Assembly of Upper Cylinder

1. When installing the upper cylinder, make sure green color (CH1) goes to CH1 head tip position on lower cylinder.
2. Tighten two (2) screws on the upper cylinder. (Refer to Fig. 13)

Note : Timing of the upper cylinder PCB.

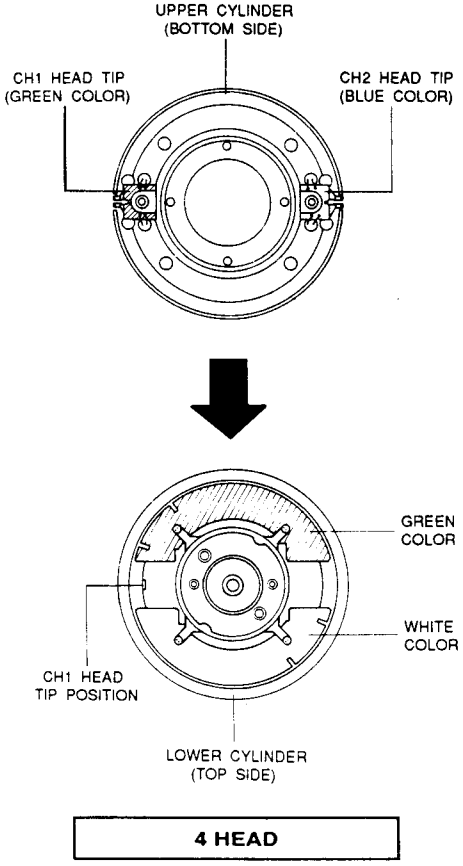
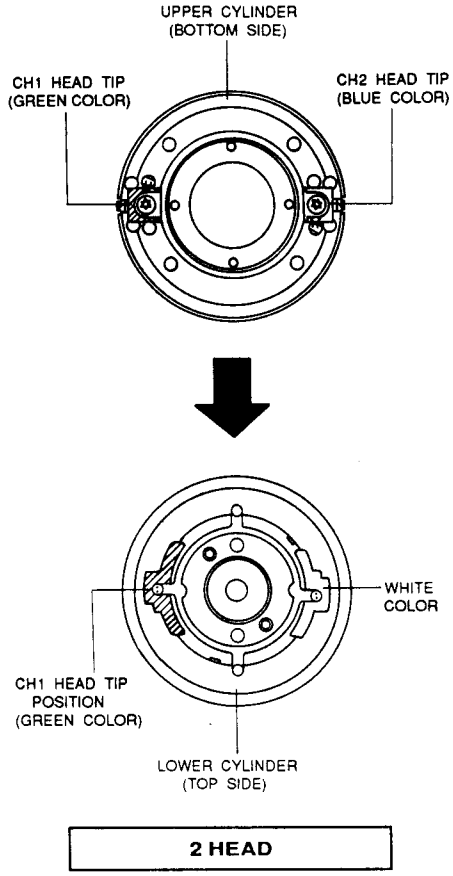


Fig. 18 Upper Cylinder Ass'y Timing

2-5-8. Assembly of Cylinder Ass'y

1. Reinstall cylinder ass'y on the main base.
2. Tighten three (3) screws securing the base cylinder and the main base.
3. Reconnect F.P.C cable to the Pre-Amp PCB and the lead connector ass'y to the bottom cylinder PCB.


UPPER CYLINDER (BOTTOM SIDE)
CH1 HEAD TIP (GREEN COLOR)
CH2 HEAD TIP (BLUE COLOR)
WHITE COLOR
CH1 HEAD TIP POSITION (GREEN COLOR)
LOWER CYLINDER (TOP SIDE)
2 HEAD

2-6. REEL DISK ASS'Y REMOVAL

2-6-1. Brake Sub "L" Removal

1. Remove the spring brake sub "L" ①.
2. Lift up the brake sub "L" ② while pushing the clip brake sub"L" ③ in the direction of arrow.

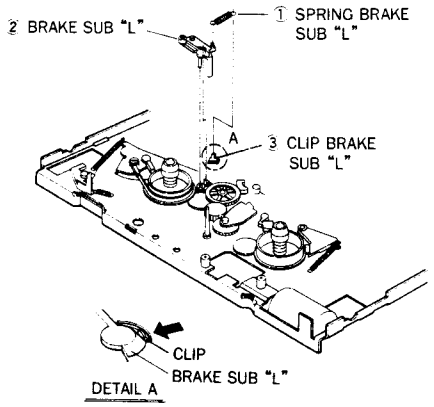


Fig. 19 Brake Sub "L" Removal

2-6-2. Gear Relay S2 & S1 Removal

1. Remove the washer slits ①.
2. Lift up the gear relay S2 ② and S1 ③.

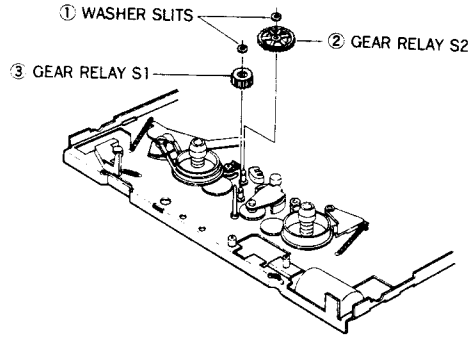


Fig. 20 Gear Relay S2 & S1 Removal

2-6-3. Full Arm Tension Ass'y Removal

1. Take off the spring tension ①.
2. Push the pin arm tension ② releasing the clip in the direction of arrow (Bottom View).
3. Lift up the full arm tension ass'y ③.

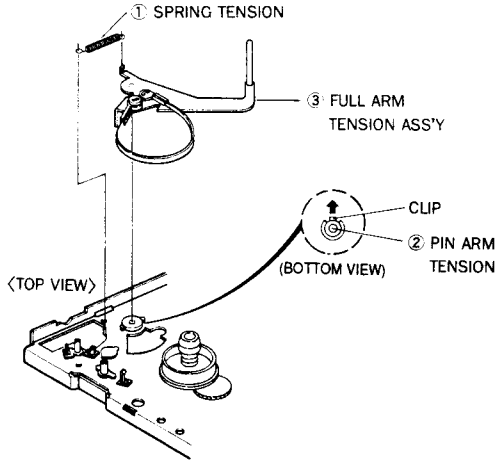


Fig. 21 Full Arm Tension Ass'y Removal

2-6-4. Reel Disk "L" Ass'y & Gear Relay S3 Removal

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "L" ass'y ② and the washer plain③.
3. Remove the washer slit (B) ④.
4. Lift up the gear relay S3 ⑤.

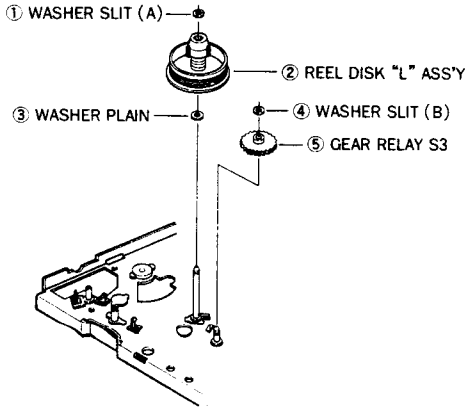


Fig. 22 Reel Disk "L" Ass'y & Gear Relay S3 Removal

2-6-5. Brake Sub "R" Ass'y Removal

1. Remove the spring brake sub "R" ①.
2. Lift up the brake sub "R" ass'y ② while pushing the clip brake sub "R" ③ in the direction of arrow.

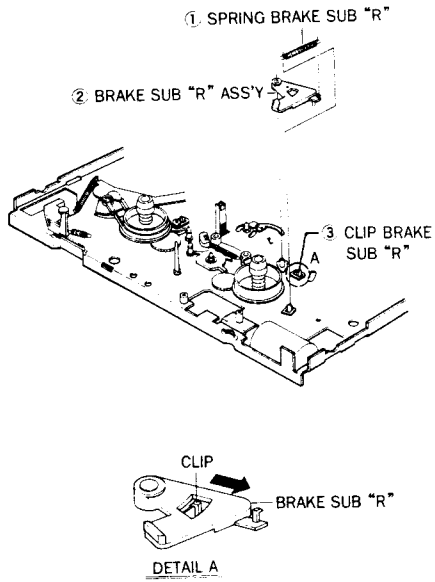


Fig. 23 Brake Sub "R" Ass'y Removal

2-6-6. Brake Main "L" & "R" Ass'y Removal (Fig. 24)

1. Remove the spring brake main ①.
2. Lift up the brake main "L" ass'y ② while pushing the clip in the direction of arrow (A). (Detail A)
3. Lift up the brake main "R" ass'y ③ while pushing the clip in the direction of arrow (B). (Detail B)

2-6-7. Reel Disk "R" Ass'y & Gear Relay "T" Removal (Fig. 25)

1. Remove the washer slit (A) ①.
2. Lift up the reel disk "R" ass'y ②.
3. Lift up the washer plain ③.
4. Remove the washer slit (B) ④.
5. Lift up the Gear Relay "T" ⑤.

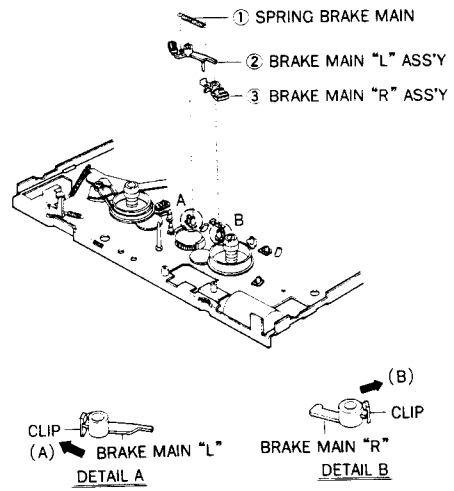


Fig. 24 Brake Main "L" & "R" Ass'y Removal

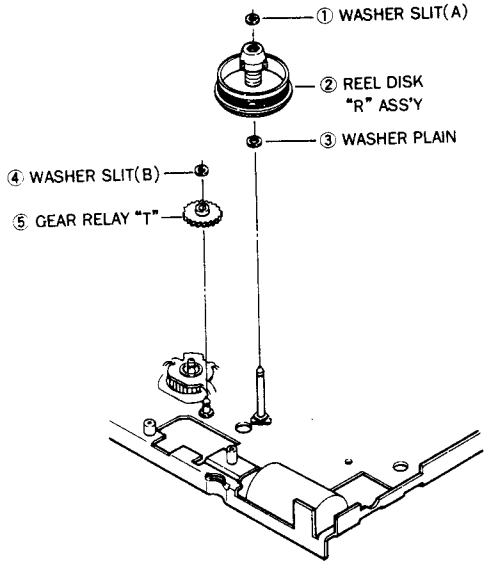


Fig. 25 Reel Disk "R" Ass'y & Gear Relay "T" Removal

2-6-8. Idler Sub Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the idler sub ass'y ②.

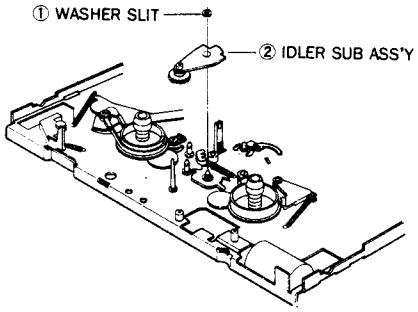


Fig. 26 Idler Sub Ass'y Removal

2-6-9. Lever REC S/W Removal

1. Remove the spring record S/W ①.
2. Lift up the lever record S/W ② while pushing the clip in the direction of arrow.

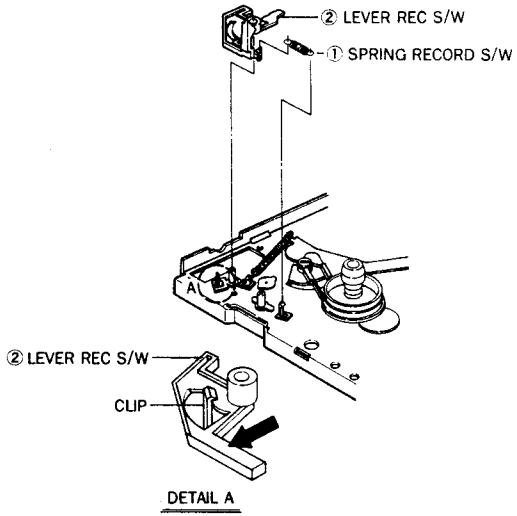


Fig. 27 Lever REC S/W Removal

2-7. LOADING & CAPSTAN MOTOR ASS'Y REMOVAL & REASSEMBLY

2-7-1. Belt Capstan Removal

1. Remove the belt capstan ①.

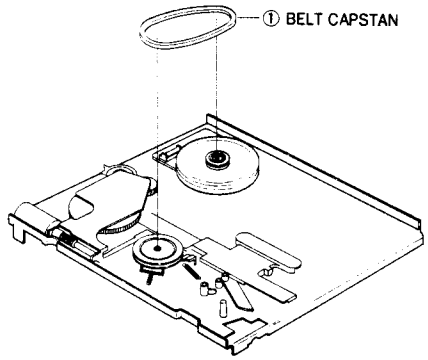


Fig. 28 Belt Capstan Removal

2-7-2. Motor D/D Capstan Removal

1. Remove three (3) screws ①. (Top View)
2. Lift up the motor D/D capstan ②. (Bouom View)

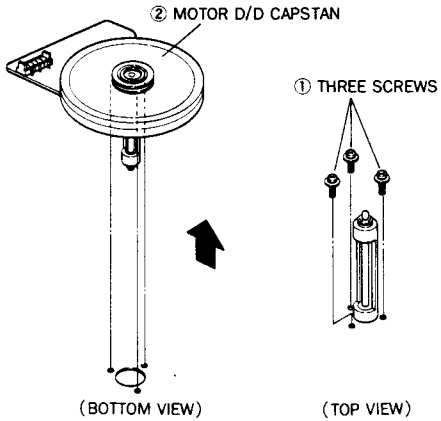


Fig. 29 Motor D/D Capstan Removal

2-7-3. Clutch Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the clutch ass'y ②.
3. Remove the washer plain ③.

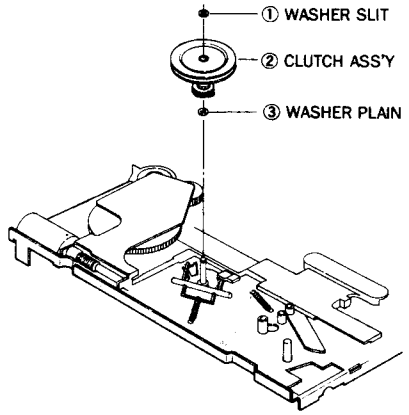


Fig. 30 Clutch Ass'y Removal

2-7-4. L/D Unit Ass'y & Gear Eject Drive Removal

1. Remove three (3) screws ① holding the loading unit ass'y ②.
2. Lift up the loading unit ass'y ②.
3. Lift up the gear eject drive ③.

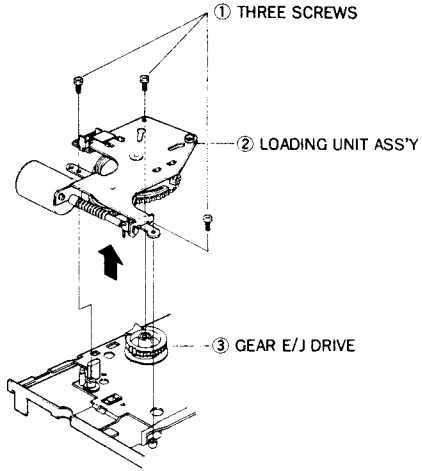


Fig. 31 L/D Unit Ass'y & Gear Eject Drive Removal

2-7-5. Slide Main Removal

1. Remove the screw ① and washer slit ②.
2. Release the clip ③ holding the slide main ④ and then lift up the slide main ④.

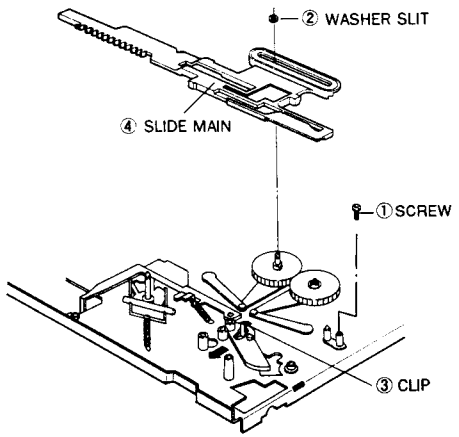


Fig. 32 Slide Main Removal

2-7-6. Brake D/D Capstan Ass'y Removal

1. Remove the spring brake capstan ①.
2. Turn the brake D/D capstan ass'y ② clockwise completely and then lift it up.

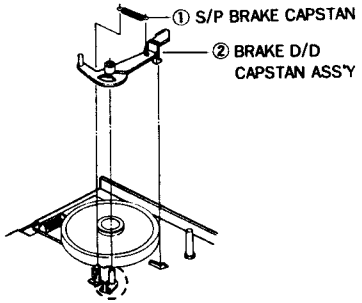


Fig. 33 Brake D/D Capstan Ass'y Removal

2-7-7. Slide I.B Ass'y Removal

1. Remove the spring brake sub ①.
2. While pushing the slide I.B ass'y ② to the end of the slot in the direction of arrow.
3. Lift up the slide I.B ass'y ②.

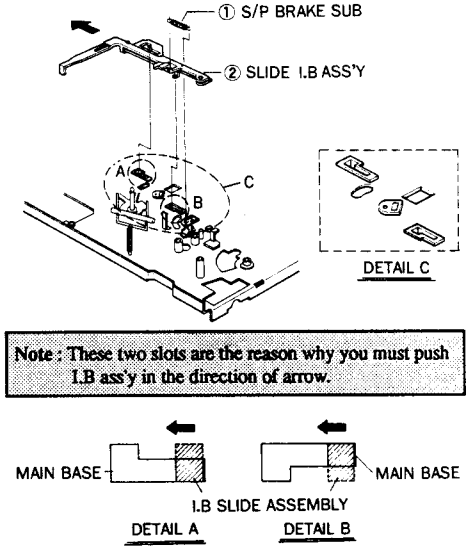


Fig. 34 Slide I.B Ass'y Removal

2-7-8. Lever Shift Removal

1. Remove the spring lever shift ①.
2. Lift up the lever shift ②.

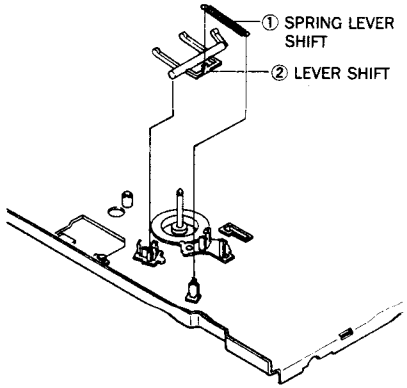


Fig. 35 Lever Shift Removal

2-7-9. Lever Tension Control Removal

1. Lift up the lever tension control ①.

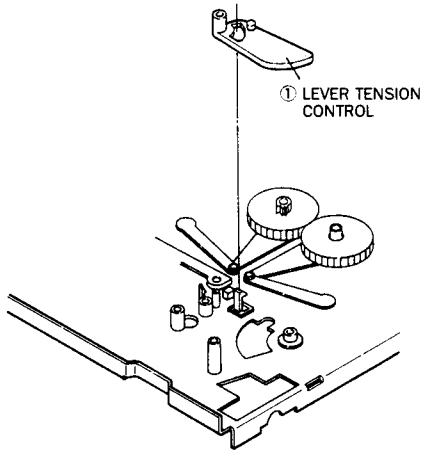


Fig. 36 Lever Tension Control Removal

2-7-10. Gear Loading "L", "R" Ass'y Removal

1. Lift up the gear loading "R" ass'y ①.
2. Lift up the gear loading "L" ass'y ③ while pushing the gear loading "L" clip ② in the direction of arrow.

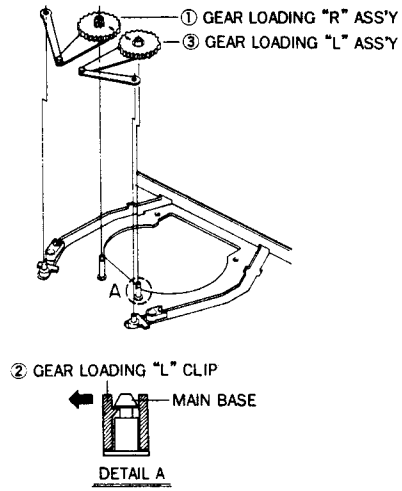


Fig. 37 Gear Loading "L", "R" Ass'y Removal

2-7-11. Review Arm Ass'y Removal

1. Remove the washer slit ①.
2. Lift up the full review arm ass'y ②.

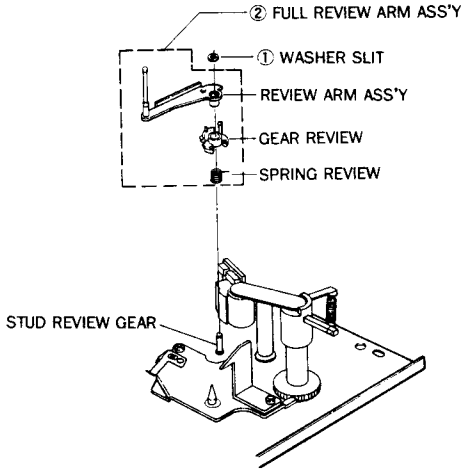


Fig. 38 Review Arm Ass'y Removal

2-7-12. Drive Cam Pinch Ass'y Removal

1. Remove two (2) screws ①.
2. Lift up the drive cam pinch ass'y ②.

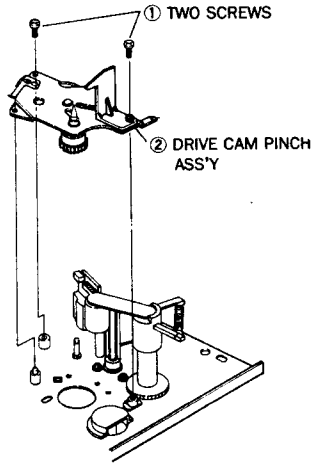


Fig. 39 Drive Cam Pinch Ass'y Removal

2-7-13. Pinch Roller Unit & Gear Escalator Removal

1. Remove the spring pinch roller ①.
2. Remove the washer slit ②.
3. Lift up the arm pinch ass'y ③.
4. Lift up the holder escalator ④ and the gear escalator ⑤.

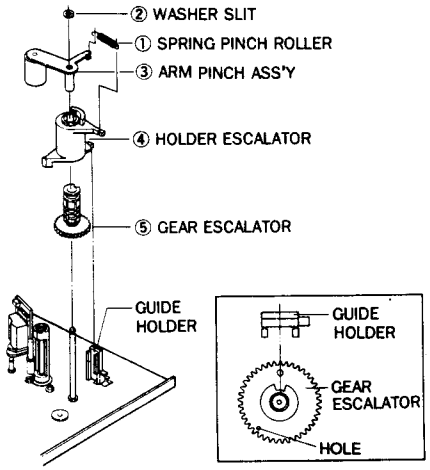


Fig. 40 Pinch Roller Unit & Gear Escalator Removal

2-7-14. Reassembly of Unit Drive Pinch Ass'y and Gear Escalator

1. Align the hole of the bracket pinch drive ① with the hole of the gear cam drive ②.
   (Refer to timing (A) in Fig. 41)
2. Align the hole of the bracket pinch drive ① with the hole of the gear cam pinch ③.
   (Refer to timing (B) in Fig. 41)
3. Align the protrusion on the side of the gear relay pinch ④ with the hole of the gear cam drive ②.
   (Refer to timing (C) in Fig. 41)
4. Install the gear escalator on the shaft and align the holes.
   (Refer to timing in Fig. 40)
5. While installing align the arrow mark of the gear cam pinch ③ with the hole of the gear escalator ⑤.
   (Refer to timing (D) in Fig. 42)
6. When aligning the timing (D), be sure to line up the timing (A), (B), (C).
7. Install the two (2) screws.

Bottom View of Drive Pinch Ass'y

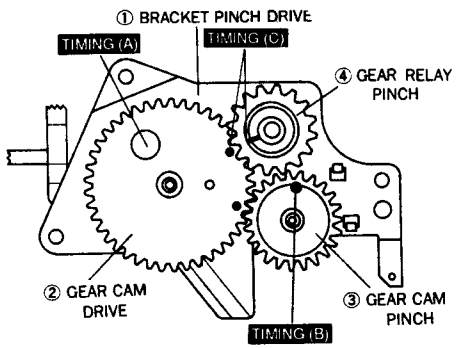


Fig. 41 Timing of Gear Cam Drive, Gear Cam Pinch & Gear Relay Pinch

Top View of Drive Pinch Ass'y

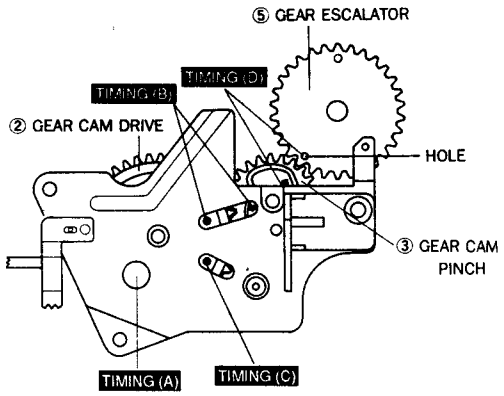


Fig. 42 Reassembly of Drive Pinch Ass'y & Gear Escalator

2-7-15. Reassembly of Full Review Arm Ass'y

1. Assemble the full review arm ass'y ① so that the gear review ② is touching the review stopper ③ as shown in Fig. 43.
2. Install the washer slit.

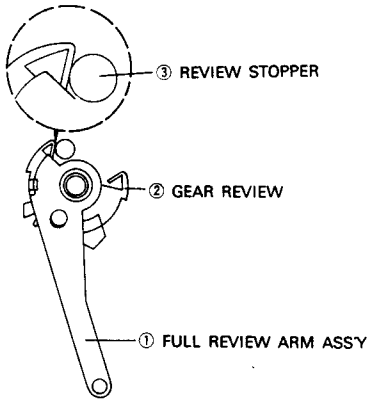


Fig. 43 Reassembly and Timing of Full Review Arm Ass'y

2-7-16. Reassembly of Gear Loading "L", "R" Ass'y

1. Reassemble the gear loading L/R ass'y in the eject mode while aligning the timing mark.
   (Refer to Fig. 44)

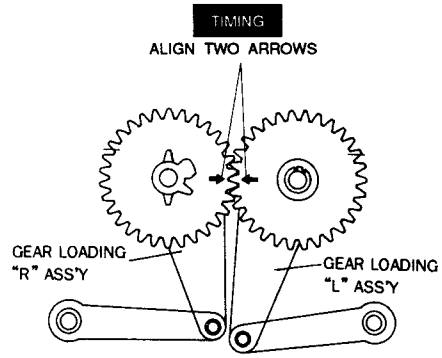


Fig. 44 Reassembly of Gear Loading "L", "R" Ass'y

2-7-17. Timing of Slide Main

1. Install the brake D/D capstan, lever tension control and slide I.B ass'y.
2. Install the slide main between brake D/D capstan and brake main "L" , while pulling the brake D/D capstan and the brake main"L" toward arrow (A) and (B) respectively.
3. At the same time, make sure the brake sub "L" and the pole base is located as shown in the Fig. 45.
4. Install the one screw.

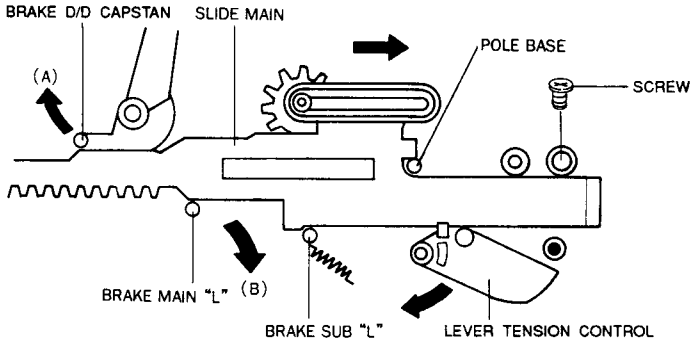


Fig. 45 Timing of Slide Main

2-7-18. Reassembly and Timing of Program S/W & Gear Master

1. Align two arrows on the program S/W ①. (Refer to timing (A))
2. After aligning timing (A) completely, install the gear master ② so that the boss on the program S/W ① is inserted into the small hole of gear master ②. (Refer to timing (B))
3. Install the gear worm wheel and then washer slit.

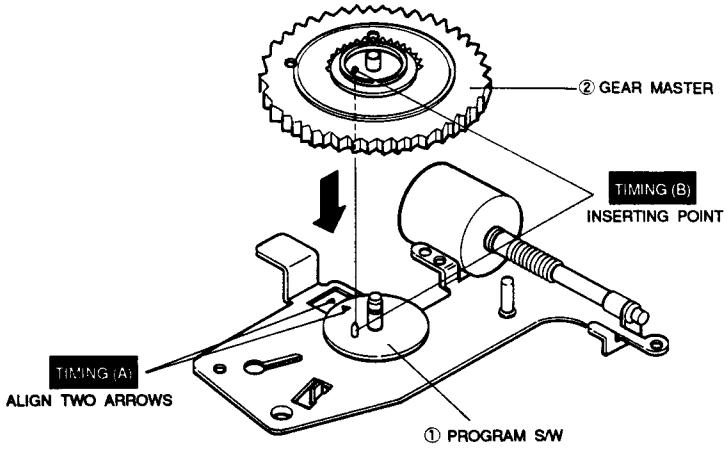


Fig. 46 Reassembly and Timing of Program S/W & Gear Master

2-7-19. Timing of Gear Master & Gear Eject Drive

1. Install the gear eject drive.
2. Install the loading unit and align the slot #2 of the gear eject drive ① with the hole of the gear master ②. (Refer to timing (A) in Fig. 47)
3. At this time, make sure that the timing (B) of the gear relay pinch ③ and the gear master ② are aligned correctly.

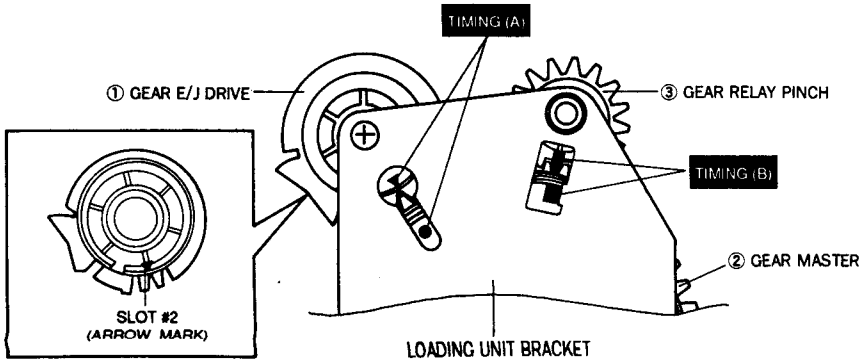


Fig. 47 Timing of Gear Master & Gear Eject Drive

2-8. TAPE TRANSPORT ASS'Y REMOVAL

2-8-1. Pole Base "L", "R" Ass'y Removal

1. Remove cylinder ass'y. (Refer to 2-5-1)
2. Move the pole base "L", "R" ass'y ①, ② to the end of slot.
3. Lift up the pole base "L", "R" ass'y ①, ②.

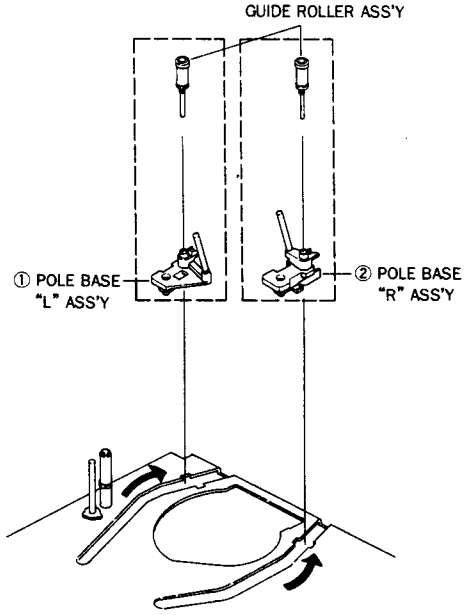


Fig. 48 Pole Base "L", "R" Ass'y Removal

2-8-2. Head Magnetic F/E Removal (Fig. 49)

1. Remove one (1) screw ① holding the full erase head ②.
2. Unsolder the F/E head P.C.B ② from the head magnetic F/E ③.
3. Lift up the head magnetic F/E ③.

2-8-3. A/C Head Ass'y Removal (Fig. 50)

1. Remove two (2) screws ①.
2. Lift up A/C head ass'y ②.
3. Reinstall in reverse order.

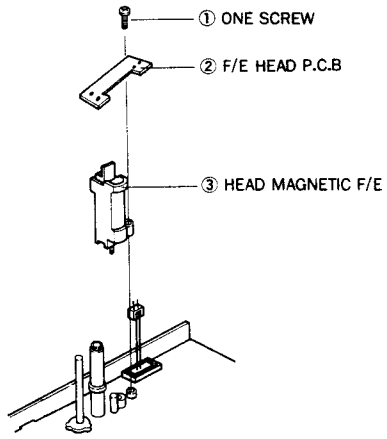


Fig. 49 Head Magnetic F/E Removal

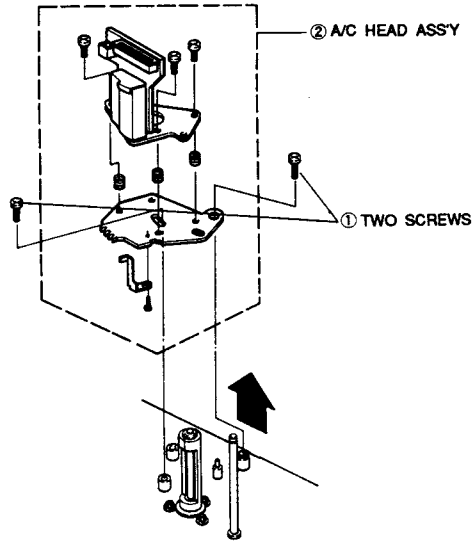


Fig. 50 A/C Head Ass'y Removal

3. MECHANICAL ADJUSTMENT

3-1. TAPE TRANSPORT SYSTEM

Note :
The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the followings :
*** Noises observed on the screen.**
*** Tape damage.**
*** Parts replacement in the tape transport system.**

3-1-1. Location of Tape Transport Adjustment (Adjustment Reference)

Lower flange height of tape guide is used as the basic reference for the transport adjustment.
To keep height of the tape guide, do not apply excessive force onto the main base to prevent damage.

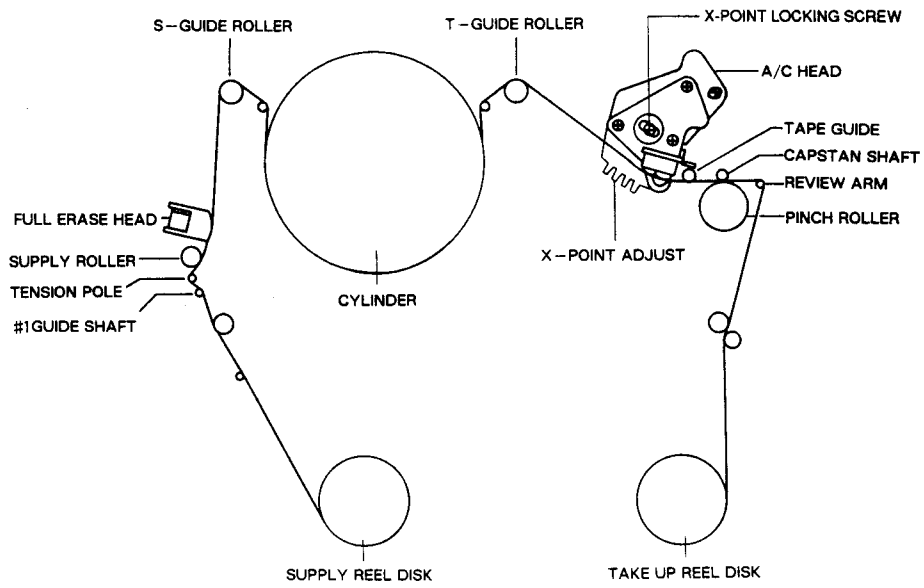


Fig. 1 Location of Tape Transport Adjustment

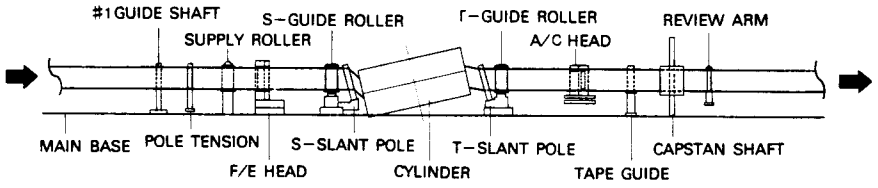


Fig. 2 Tape Travel Diagram

3-1-2. Tape Transport System Adjustment

1) Pre-adjustment

When the part(s) are replaced, perform required adjustments by referring to procedures for the tape transport system. When the part (s) are replaced, the tape path may be changed.
First run a E-180 tape and make sure excessive tape wrinkle does not occur at each tape guide.

1. If tape wrinkle is observed at the S, T-guide rollers, turn the S,T-guide rollers until wrinkle disappears.
2. If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the A/C head.

2) Adjustment procedure

1. A/C head assembly adjustment

Test Point :	W3V02 (Envelope)
	W3V03 (H'D SW - Trigger)
	W3V04 (CTL Pulse)
	W088 (Audio Out)
Test Tape :	SR2-2 (Color Bar ; 1KHz)
	SR1-2 (Mono Scope ; 6KHz)
	Blank Tape (E-240)

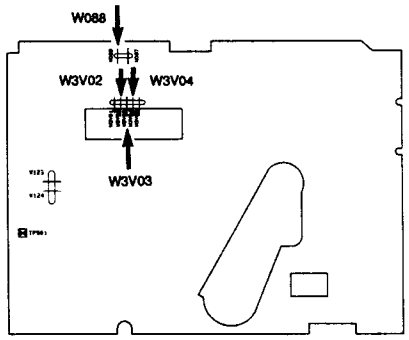


Fig. 3 Location of Test Point (Main PCB)

a. A/C head height adjustment

1. Run the alignment tape SR2-2 in the playback mode.
2. Observe surface of the audio head using a dental mirror.
3. Turn screw (A), (B), (C) clockwise or counterclockwise *until the gap of lower tape edge and the lower edge of* the control head is about 0.25 mm.
(Refer to Fig. 4 and 5)

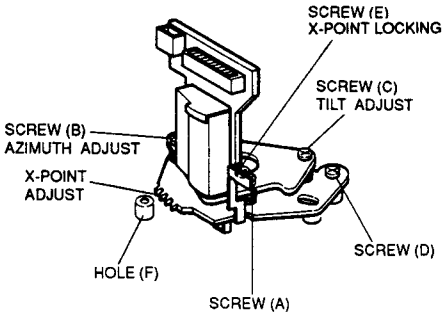


Fig. 4 Location of A/C Head Adjustment Screw

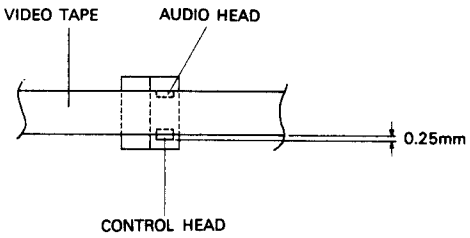


Fig. 5 A/C Head Height Adjustment

b. A/C head tilt adjustment

1. Playback a E-240 tape and observe position of the tape at the lower flange of tape guide.
2. Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 6 (B).
3. If a curl or wrinkle of the tape has occurred, slightly turn the screw (C) tilt adjust on the A/C H'd ass'y clockwise until it disappears as shown in Fig. 6 (B).
4. Reconfirm the A/C head height.

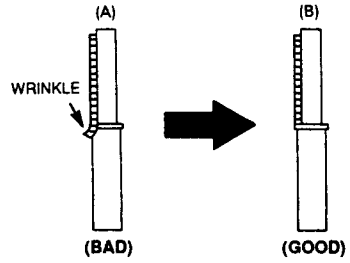


Fig. 6 Tape Guide Check

c. Audio azimuth adjustment

1. Load alignment tape (SR1-2 ; 6KHz) and playback the 6KHz signal.
2. Connect channel-1 scope probe to W088 on the Main PCB.
3. Adjust screw (B) to achieve maximum audio level. (See Fig. 4)

d. A/C head position (X-Point) adjustment

1. Playback the SR1-2 alignment tape.
2. Connect CH-1 scope probe to W3V04.
3. Connect CH-2 scope probe to W3V03 and trigger head switching pulse.
4. Set tracking preset to 0.5msec(2Head), 15msec(4Head) using the "FINE" button ▲/▼ of remote control. (Refer to Fig. 7 and 8)
5. Connect CH-1 scope probe to W3V02.
6. Turn screw (E) counterclockwise. (See Fig. 4)
7. Insert the adjusting driver (X-Point) into the hole (F) of main base and adjust the A/C head ass'y so that envelope waveform is maximum amplitude and then tighten screw (E).

◈ **Setting of Scope** ◈
- Volt/div. ; CH-1 = 0.1V
  CH-2 = 0.2V
- Time/div. ; 5msec

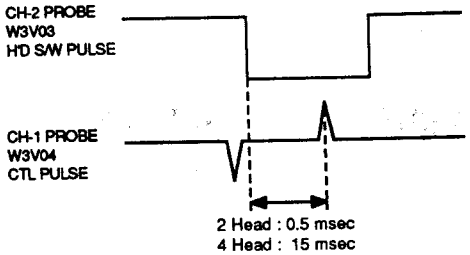


Fig. 7 Tracking Preset Adjustment

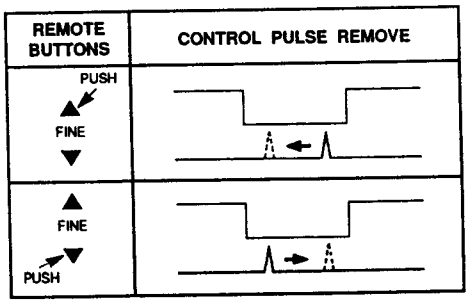


Fig. 8 Control Pulse Adjustment

2. Linearity adjustment (S, T-guide rollers adjustment)

Test Point :	W3V02 (Envelope)
	W3V03 (H'D SW - Trigger)
Test Tape :	SR1-2 (Mono Scope ; 6KHz)

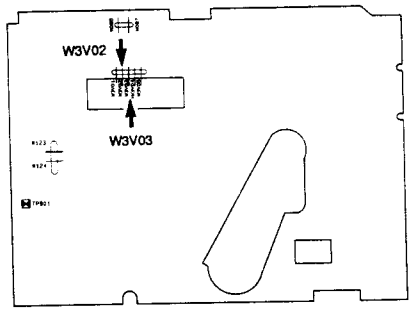
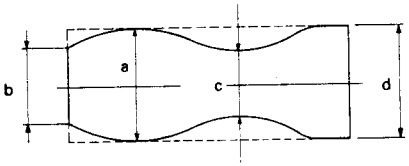


Fig. 9 Location of Test Point (Main PCB)

1. Playback the SR1-2 alignment tape (SP mode).
2. Observe the video envelope signal on an oscilloscope triggered by the video switching pulse.
3. Make sure the video envelope waveform (in its minimum output) meets the specification shown in Fig. 10. If it does not, adjust as follows ;

Note :
a=Maximum output of the video RF envelope.
b=Minimum output of the video RF envelope at the entrance side.
c=Minimum output of the video RF envelope at the center point.
d=Minimum output of the video RF envelope at the exit side.



a b c d

c, b, d/a ≧ 63%

Fig. 10 Envelope Waveform Adjustment

4. If the section A in Fig. 11 does not meet the specification, adjust the S-guide roller up or down.
5. If the section B in Fig. 11 does not meet the specification, adjust T-guide roller up or down.

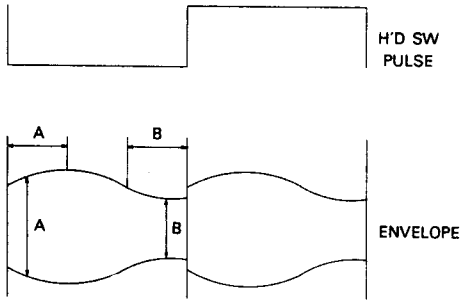


Fig. 11 Adjustment Points

6. Slightly loosen the set screw at the lower part of the S, T-guide rollers with a (Hex Wrench - 0.9mm) so that the guide roller can be adjusted with reasonable tightness. (Refer to Fig. 12)

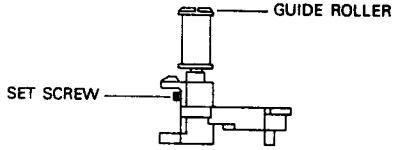


Fig. 12

7. Playback the SR1-2 alignment tape (SP mode).
8. Connect an oscilloscope CH-1 to the W3V02 and CH-2 to the W3V03 on the same PCB for triggering.
9. Turn the guide roller heads with a flat head (▬) screw driver to obtain flat video RF envelope as shown in Fig. 13.
10. After the adjustment is completed, tighten the set screws.

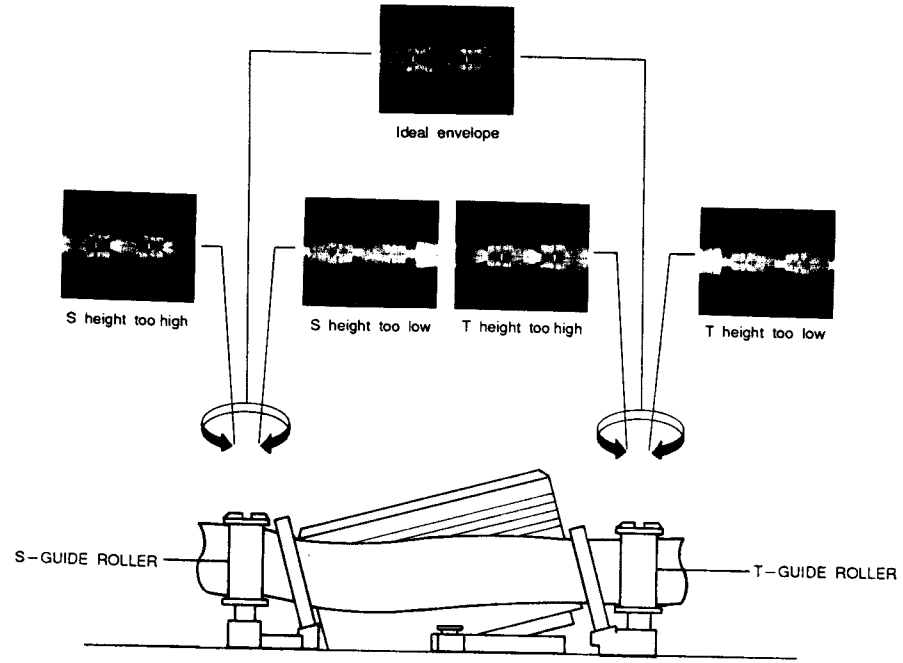


Fig. 13 S, T-Guide Roller Height Adjustments

3. Check for transitional operation from RPS to play

Check transition from RPS mode to play mode, using a pre-recorded SP tape, make sure the entrance side of envelope comes to an appropriate steady state within 3 seconds as shown in Fig. 14.

If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

1. Make sure there is no gap between the supply roller lower flange and the tape.
   If there is a gap, adjust the supply guide roller again.
2. Change operation mode from the RPS to the play mode again and make sure entrance side of envelope rises within 3 seconds.

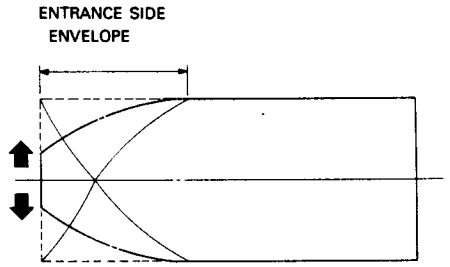


Fig. 14 Video envelope rising when operation mode changes from RPS to play mode.

4. Envelope check

1. Make recordings on E-120 and E-180 tapes, and make sure the playback output envelope meets the specification as shown in Fig. 15.
2. Playback a self recorded tape (recording made on this unit), (with a E-120) the video envelope should meet the specification as shown in Fig. 15.
   In SP mode, (A) should be same as (B).
   If the head gap is wide, upper cylinder should be checked.

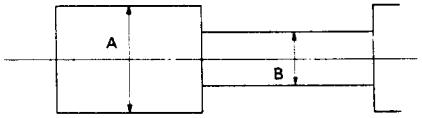


Fig. 15 Envelope Output and Output Level Difference

5. Tape wrinkle check

1. Run the E-240 tape in the playback, FPS, RPS and the pause mode and then observe tape wrinkle at each guide.
2. If excessive tape wrinkle is observed in the mode shown below, perform the associated adjustment shown below.

a. Playback mode
- Tape wrinkle at the S, T-guide roller section : Linearity adjustment.
- Tape wrinkle at tape guide flange : A/C head assembly coarse adjustment.

3-2. REEL TORQUE

3-2-1. Reel Torque

1. The rotation of the capstan motor operates the clutch ass'y through the belt capstan motor.
2. Brake operation and shift operation in FF/REW are done by a slide lever.
3. Transportation of accurate driving force is done by gears. (clutch ass'y)

MODE	TORQUE g/cm	GAUGE
PB/REC	100 ± 30	Cassette Torquement
RPS	170 ± 30	Cassette Torquement
FF/REW	Minimum 600	Torque Gauge

Note : If the spec is out of above chart, replace the clutch ass'y and then recheck.

3-2-2. Location of Tension Pole and Back Tension Adjustment

1. Remove the housing ass'y and set the deck to play mode.
2. Adjust the cam tension to 0 ~ −0.5mm from the center of supply roller.
3. The back tension meter should be used for checking back tension.

Check back tension, should be 40 ~ 47g.cm.
If not, adjust cam tension.

Counterclockwise : Torque UP
Clockwise : Torque DOWN

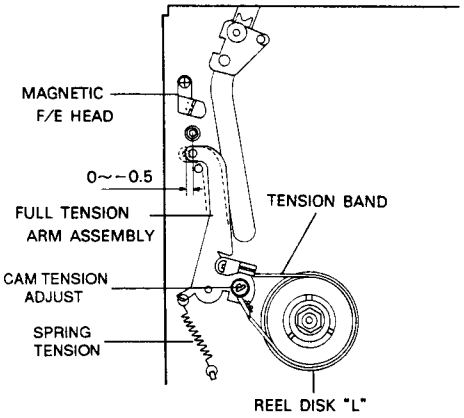


Fig. 16 Tension Pole and Back Tension Adjustment

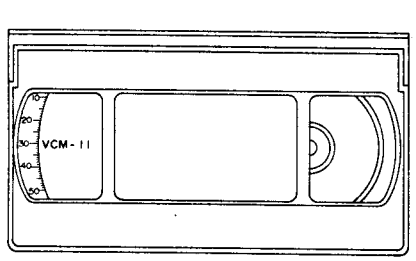


Fig. 17 Back Tension Tape Torque Cassette

4. ELECTRICAL ADJUSTMENTS

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustment only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1. Required Test Equipment

1. Color Television or Monitor.
2. Oscilloscope : wide-band, dual-trace, triggered delayed sweep.
3. Trackingscope.
4. AC Voltmeter.
5. Recording tape. (Blank tape)
6. Alignment tapes : SR1-2, SR2-2, SR2-3.

Tapes	Video Signal	Audio Signal
SR1-2 (PAL)	Mono Scope	6 KHz
SR2-2 (PAL)	Color Bars	1 KHz
SR2-3 (SECAM)	Color Bars	1 KHz

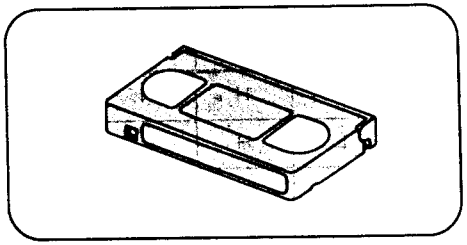


Fig. 1 Alignment Tape

7. Pattern Generator : PAL color bar. 100% White.

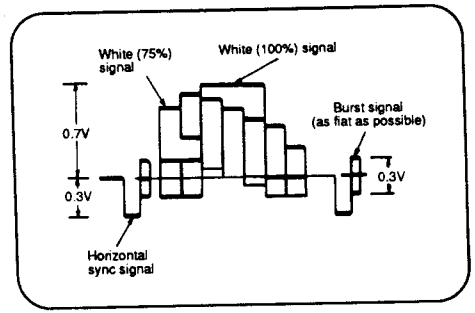


Fig. 2 Color bar signal of pattern generator

(Color Bar Signal)
The 75% color bar signal recorded on the alignment tape is shown in Fig. 3.

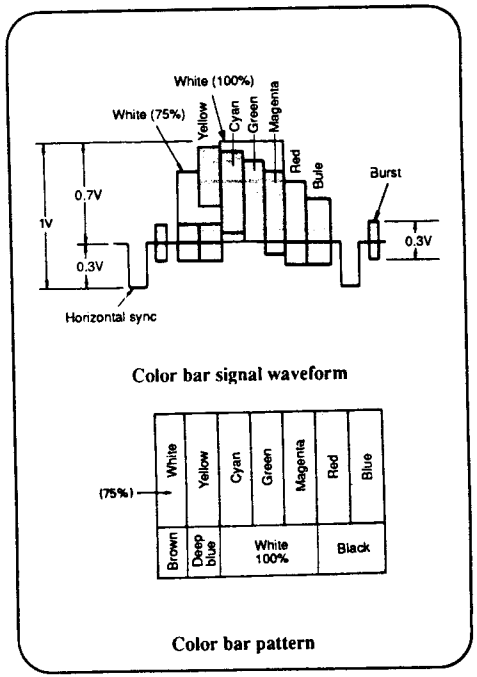
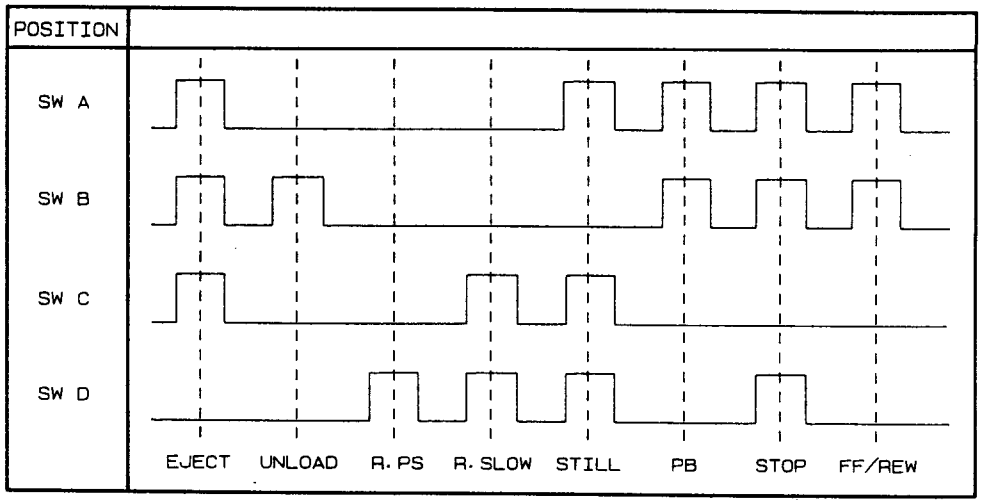


Fig. 3 Color bar signal of alignment tape

4-2. PROGRAM SWITCH TIMING CHART

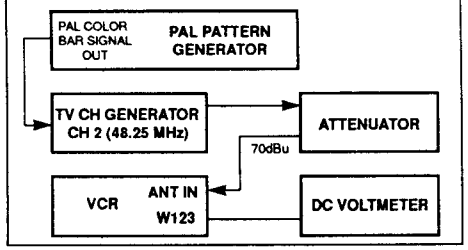


MODE (OPERATION CONDITION)	SWITCH POSITION	IC606			
		A	B	C	D
EJECT	EJECT	H	H	H	L
UNLOAD	UNLOAD	L	H	L	L
R. PS	R. PS	L	L	L	H
R. SLOW	R. SLOW	L	L	H	H
STILL	STILL	H	L	H	H
PLAY. FPS. REC	PB	H	H	L	L
STOP	STOP	H	H	L	H
FF/REW	FF/REW	H	H	L	L

4-3. SERVO, AUDIO, TUNER & OSD SECTION

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS	ADJ. part Test Point

*** Composition for RF AGC Adjustment**



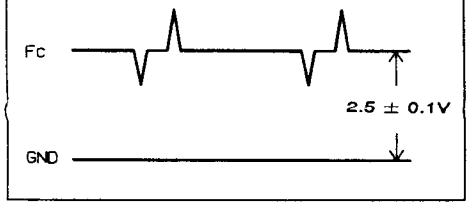
3 RF AGC

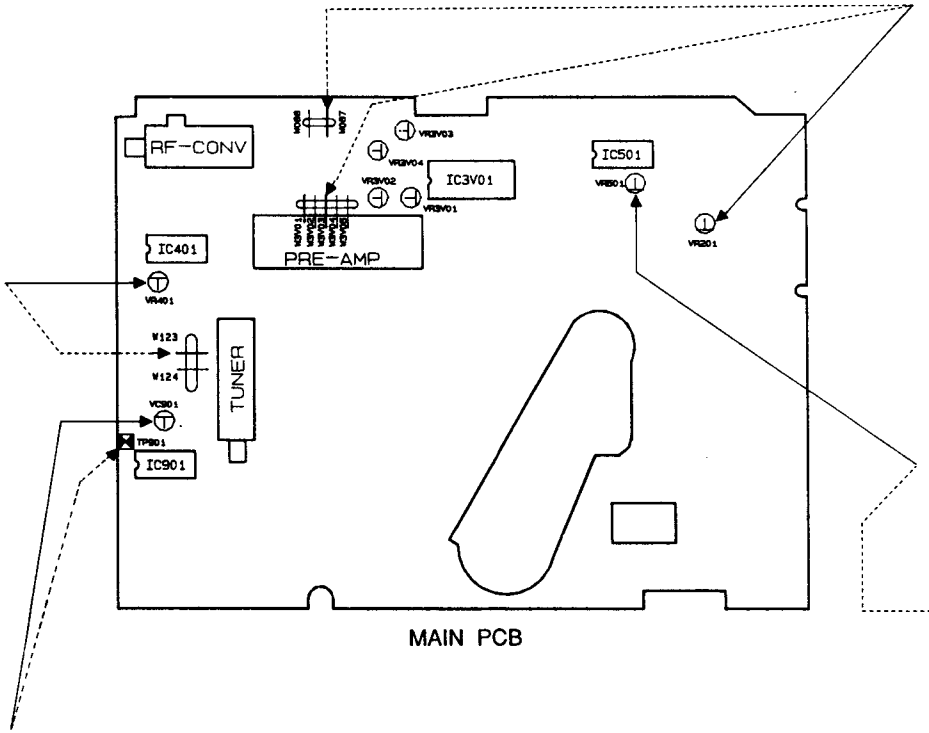
1. "E-E" (stop mode), RF signal.
2. W123 & VR401.
3. * Apply PAL color bar signal to the video input terminal of the TV channel generator and set channel selector to CH 2 (48.25 MHz).
   * Adjust the point signal level so that the output of attenuator is 70 dBu.
   * Apply the output of attenuator to the ANT IN terminal of VCR.
   * Set the channel of VCR to CH 2.
   * Connect DC voltmeter to W123.
   * Adjust VR401 for DC 5.0 ± 0.1V or DC 5.2 ± 0.1V.

TUNER TYPE	TUNER SPEC	AGC VOLTAGE
HYPER BAND	TEKE 4-012A	DC 5.2 ± 0.1V
	TECC	
NON HYPER BAND	2889VA15W	DC 5.0 ±0.1V
	TEKE 1-034A	

4 OSD Fc LEVEL

1. "E-E" (stop mode), Color bar signal (V. IN jack on the rear panel).
2. TP901 & VC901.
3. * Connect an oscilloscope CH-1 to TP901.
   * Adjust VC901 so that the DC level is 2.5 ± 0.1 V.

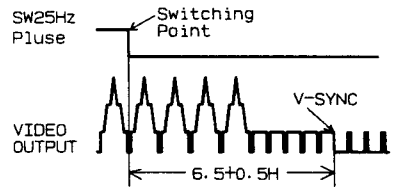




MAIN PCB

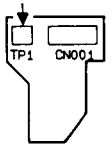
1 SWITCHING POINT

1. "PB", Alignment tape SR2-2.
2. W3V03 (H'd SW), W087 (Video out) & VR201.
3. * Connect an oscilloscope's CH-1 to W3V03 for triggering and CH-2 to W087.
   * Adjust VR201 so that the switching point is positioned 6.5 ± 0.5 H from the V-SYNC left edge as shown.



2 AUDIO BIAS LEVEL

1. "REC"(SP mode), No signal input.
2. TP1 (A/C Head) & VR501.
3. * Connect AC voltmeter probes to TP1 on the A/C Head PCB.
   * Adjust VR501 so that the reading on the AC voltmeter becomes 2.5mVrms.



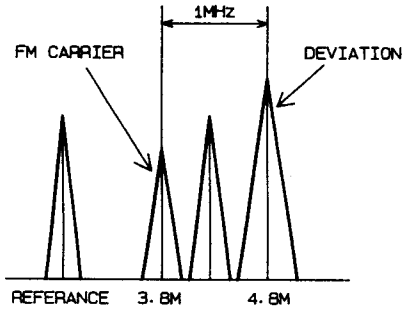
A/C HEAD PCB

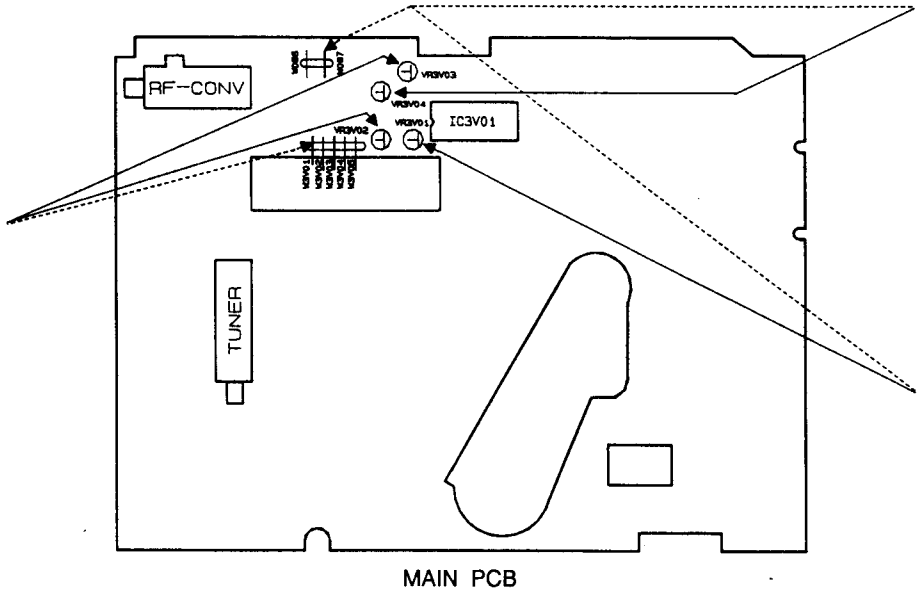
4-4. VIDEO SECTION

STEP	ADJUSTMENT ITEM
1. MODE and INPUT SIGNAL/ALIGNMENT TAPE 2. TEST POINT and ADJ. part 3. RESULT & REMARKS	ADJ. part Test Point

3 FM CARRIER & DEVIATION

1. "REC", 100% white signal (V. IN jack on the rear panel).
2. W3V01 (REC FM) & VR3V02 (DEVIATION), VR3V03 (FM CARRIER).
3. * Connect tracking scope to W3V01.
   * Adjust VR3V04 so that the frequency is 3.8 ± 0.1 MHz.
   * Adjust VR3V02 so that the frequency is 4.8 ± 0.1 MHz.

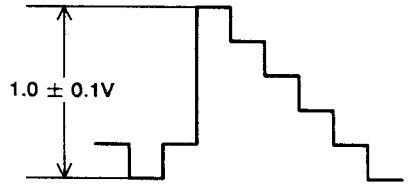




MAIN PCB

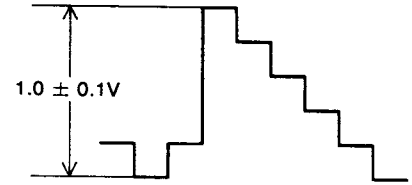
1 VIDEO E-E LEVEL

1. "E-E" (stop mode), Color bar signal (V. IN jack on the rear panel).
2. W087 & VR3V03.
3. * Connect an oscilloscope CH-1 to W087.
   * Adjust VR3V04 for 1.0 ± 0.1 Vp-p from sync tip to white peak level.



2 VIDEO PB LEVEL

1. "PB", Alignment tape SR2-2.
2. W087 & VR3V01.
3. * Connect an oscilloscope CH-1 to W087.
   * Connect V. OUT jack on the rear panel (scart terminals).
   * Adjust VR3V01 so that PB level becomes 1.0 ± 0.1 Vp-p.



5. ELECTRICAL PARTS LIST

5-1. GENERAL INFORMATION

1. Parts Replacement

Many electrical and mechanical parts in Video Cassette Recorder (Player) have special safety-related characteristics. These characteristics are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual ; electrical components having such features are identified by ⚠ in the replacement parts lists and schematic diagrams. The use of a replacement part which does not have the same safety characteristics as the factory recommended replacement parts shown in this service manual may create shock, fire or other hazards.

2. Unless otherwise specified :

1) All resistors are in ohms (Ω)

- **K** = 1,000
- **M** = 1,000K

* **RD** : 1/4W, ± 5% Carbon
* **RM** : 1/8W, ± 5% Metal-film

2) All capacitors are in ± 10%, MF = μF.

* **CC** : PF = uuF, Ceramic, Temp
* **CK** : PK = uuF, Ceramic, MK
* **CS** : Tantalium
* **CQ** : Polyester
* **CE** : Electrolytic

3) All coils are in microhenry (uH)

- **1mH** = 1,000uH

3. ASS'Y = Assembly

4. ⚠ Mark : Safety related parts.

5. How to order replacement parts

To have your order filed promptly and correctly, please furnish the following informations.

1) Model Number
2) Location Number
3) Part Number
4) Description & Specification

5-2. ELECTRICAL REPLACEMENT PARTS LIST

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
660	69097-123-116	ASSY SMPS
BD1	B4104-0065	DIODE-RECT;S1WB60 600V 1A BRIDGE GE
C01	61419-001-001	C-FILM;KNB1530 0.1UF/AC250V
C02	61419-001-001	C-FILM;KNB1530 0.1UF/AC250V
C03	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C04	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C05	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C06	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C07	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C08	A1100-0450	C-CERAMIC;CK 45 B 400V 222-M CK45B500V222K
C11	A1104-0F11	C-ELEC;CE 04 B 400V T 470-M 18X25
C12	61507-121-531	C-POLYESTER;CQ921M TAPG 50V 333-J
C13	A1104-0549	C-ELEC;CE 04 D 50V 220-M STX/KME -55/105
C14	61507-121-340	C-POLYESTER;CQ921M TAPG 50V 102-K
C15	A1104-0548	C-ELEC;CE 04 D 50V 2R2-M STX/KME -55/105
C17	A1102-0219	C-FILM;CQ 922P 630V T 103-K SC-ARD135
C18	61419-001-006	C-CERAMIC;CKB3A 101K 06BS 1KV
C19	61507-121-440	C-POLYESTER;CQ921M TAPG 50V 562-K
C20	B1102-0125	C-FILM;CQ982P 50V T 104J-40/85 ECQV1H104JZ3
C31	A1104-0541	C-ELEC;CE 04 D 100V 100-M -55/105
C33	A1104-0373	C-ELEC;CE 04 F 25V T 331-M STX/KME -40/105
C34	A1104-0373	C-ELEC;CE 04 F 25V T 331-M STX/KME -40/105
C35	A1104-0480	C-ELEC;CE 04 F 16V T 471-M STX/KME -40/105
C36	A1104-0497	C-ELEC;CE 04 F 16V T 331-M STX -40/105 330MF
C37	A1104-0203	C-ELEC;CE 04 D 50V 470-M STX/KME 47UF -55/105
C38	A1104-0383	C-ELEC;CE 04 F 10V T 101-M STX/KME -40/105
C39	61407-105-101	C-CERAMIC TEMP;CC45 CH TAPG 25V 0.1-M
C40	61507-121-470	C-POLYESTER;CQ921M TAPG 50V 103-K
CN01	A3040-0071	JACK-AC INLET;BSP-9221 2P PAL
CN02	A6010-0407	CONNECTOR-WAFER;28-5085-009-000 BLK
D11	B4102-0006	DIODE-FR;EG01C(3.3)V 500MA (0.1)US
D12	62169-406-482	DIODE;1N4148 SAMSUNG
D13	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T
D31	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T
D33	B4102-0048	DIODE-FR;S2L20U 200V 1.5A 35NS T
D34	B4102-0050	DIODE-FR;D3L20U 200V 2.5A 35NS STICK
D36	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T
D37	B4102-0047	DIODE-FR;ERA18-04V1 400V 800MA 0.4US T
IC01	B4008-1054	IC-S/W REGU;FA5311 DIP STICK
IC02	B4161-0019	PHOTO-COUPLER;PC121FY
IC03	A4008-0757	IC;KA431ZTO-92 TAPING
L01	64529-420-230	LINE FILTER;SHL 030
L31	A1150-0016	INDUCTOR;70UH-M RT BFS3565R2F
L32	A1132-0008	COIL-PEAKING;10UH-J RA Q80 F22MHZ
L33	A1150-0015	INDUCTOR;70UH-M RT BFS3565R2F
PT01	A1206-0030	TRANS-SWITCHING;P:85-264V S:3.3-33V DEMKO
Q01	B4054-0036	FET;2SK903 40W 3A 800V MOS/N-CHANNEL
R11	B1004-0198	R-METAL OXIDE;RS 2 T 333-J;ERG2SJ333E
R12	B1004-0198	R-METAL OXIDE;RS 2 T 333-J;ERG2SJ333E
R13	61048-177-512	R-CARBON;RD 1/8 T 512-J
R14	61048-177-181	R-CARBON;RD 1/8 T 181-J
R15	61048-177-181	R-CARBON;RD 1/8 T 181-J
R16	61048-177-220	R-CARBON;RD 1/8 T 220-J
R17	61018-227-623	R-CARBON;RD 1/4 P 62K-J
R18	61018-227-623	R-CARBON;RD 1/4 P 62K-J
R19	61048-277-333	R-CARBON;RD 1/4 T 333-J
R20	61018-227-623	R-CARBON;RD 1/4 P 62K-J
R21	61048-177-104	R-CARBON;RD 1/8 T 104-J
R22	A1014-0011	R-CEMENT;RWC 2 R 2R7-K
R24	61048-177-330	R-CARBON;RD 1/8 T 330-J
R25	A1014-0014	R-CEMENT;RWC 2 R(S) R47-K
R26	61048-177-101	R-CARBON;RD 1/8 T 101-J
R31	B1004-0274	R-METAL OXIDE;RS 1 RT 301-J ERG1SJ301E
R32	B1004-0274	R-METAL OXIDE;RS 1 RT 301-J ERG1SJ301E
R33	61048-177-391	R-CARBON;RD 1/8 T 391-J
R34	61048-177-122	R-CARBON;RD 1/8 T 122-J
R35	61048-177-102	R-CARBON;RD 1/8 T 102-J
R36	A1006-0592	R-METAL FILM;RM 1/8 T 3K-F
R37	B1004-0227	R-METAL OXIDE;RS 2 R 101-J/ERG2SJ101E
R38	A1006-0423	R-METAL FILM;RM 1/8 T 2.2K-F
T01	B3065-0157	FUSE;FST 250V 1.6A 20MM SEMKO S505 C
ZD11	62169-423-096	DIODE-ZENER;MTZ 22D
ZD12	62169-423-030	DIODE-ZENER;MTZ-18C
ZD13	A4106-0006	ZENER DIODE;MTZ 4.7B
ZD14	62169-403-829	DIODE-ZENER;MTZ 30D

****

	V9099-625-741	ASSY-REMOCON;ABS94HB VXK-306/SEC
	V9099-625-742	ASSY-REMOCON;ABS94HB VXK-306/SEG
	V9099-625-739	ASSY-REMOCON;ABS94HB VXK-336/SEC
	V9099-625-740	ASSY-REMOCON;ABS94HB VXK-336/SEG
	V4043-0051-00	DOOR-BATTERY;NR-2559M ABS94HB GRAY
	V4043-0055-01	HIDDEN-DOOR;ABS94HB VXK-306
CT01	61637-802-479	C-ELEC;CEAP 6.3V 4.7M SE(3X5)
CT02	61453-131-101	C-CERAMIC;CHIP;0805 5A 101JAT MA
CT03	61453-131-101	C-CERAMIC;CHIP;0805 5A 101JAT MA
DT01	62309-112-041	LED-IR;GL536
DT02	62309-112-041	LED-IR;GL536
ICT01	A4002-0064	IC-MCU;KS51800-05 VCR SOP
QT01	A4050-0140	TR-GENERAL;CHIP;2SC2412KR 200MW 100MA
RT01	61079-917-010	R-CHIP;RH C2012 CS 010-J
RT02	61079-917-564	R-CHIP;RH C2012 CS 564-J
XT01	64539-102-311	CERAMIC RESONATOR;CSB455EBL/KBR455BKTL

****

670	69371-302-284	ASSY F/TIMER;VXK-306/SEC
	69371-302-256	ASSY F/TIMER;VXK-306/SEG
	69371-302-312	ASSY F/TIMER;VXK-336/SEC
	69371-302-311	ASSY F/TIMER;VXK-336/SEG
C701	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
C702	61617-404-101	C-ELEC;CEAP 16V 100M RSS(6.3X7)
C710	61407-117-102	C-CERAMIC;AXIAL;CAX B TAPG 102-K
C711	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C715	61617-404-100	C-ELEC;CEAP 16V 10M RSS(4X7)
C799	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
CN701	B6010-0397	CONNECTOR-WAFER;HLEM 33R-1 BLK
D700	62169-406-482	DIODE;1N4148 SAMSUNG
D701	62169-406-482	DIODE;1N4148 SAMSUNG
D708	62169-406-482	DIODE;1N4148 SAMSUNG
D709	62169-406-482	DIODE;1N4148 SAMSUNG
D710	62169-406-482	DIODE;1N4148 SAMSUNG
D711	62169-406-482	DIODE;1N4148 SAMSUNG
D712	62169-406-482	DIODE;1N4148 SAMSUNG
D713	62169-406-482	DIODE;1N4148 SAMSUNG
D714	62169-406-482	DIODE;1N4148 SAMSUNG
D715	62169-406-482	DIODE;1N4148 SAMSUNG
D716	62169-423-092	DIODE-ZENER;MTZ 6.8B/UZ 6.8BH
DT701	A4153-0043	V.F DISPLAY;SVV-10BS05 VTR
IC701	62119-401-872	IC;KA393
L701	66639-0003-00	FERRITE-BEAD INDUCTOR;NI-ZN K150 BI3857
R701	61048-177-472	R-CARBON;RD 1/8 T 472-J
R702	61048-177-472	R-CARBON;RD 1/8 T 472-J
R703	61048-177-473	R-CARBON;RD 1/8 T 473-J
R704	61048-277-101	R-CARBON;RD 1/4 T 101-J
R705	61048-277-101	R-CARBON;RD 1/4 T 101-J
R711	61048-177-683	R-CARBON;RD 1/8 T 683-J
R712	61048-177-683	R-CARBON;RD 1/8 T 683-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R613	61079-917-270	R-CHIP;RH C2012 CS 270-J
R614	61048-177-472	R-CARBON;RD 1/8 T 472-J
R618	61079-917-472	R-CHIP;RH C2012 CS 472-J
R619	61079-917-472	R-CHIP;RH C2012 CS 472-J
R620	61048-177-102	R-CARBON;RD 1/8 T 102-J
R630	B1004-0229	R-METAL OXIDE;RS 1R 7 5-J/ERX1SJ7R5E
R631	B1004-0229	R-METAL OXIDE;RS 1R 7 5-J/ERX1SJ7R5E
R632	61048-177-101	R-CARBON;RD 1/8 T 101-J
R633	61048-177-102	R-CARBON;RD 1/8 T 102-J
R634	61079-917-000	R-CHIP;RH C2012 CS 000-J
R635	61048-177-102	R-CARBON;RD 1/8 T 102-J
R636	61048-177-102	R-CARBON;RD 1/8 T 102-J
R637	61048-177-103	R-CARBON;RD 1/8 T 103-J
R638	61048-277-121	R-CARBON;RD 1/4 T 121-J
R639	61079-917-105	R-CHIP;RH C2012 CS 105-J
R640	61079-917-224	R-CHIP;RH C2012 CS 224-J
R642	61079-917-203	R-CHIP;RH C2012 CS 203-J
R643	61079-917-472	R-CHIP;RH C2012 CS 472-J
R644	61079-917-472	R-CHIP;RH C2012 CS 472-J
R645	61079-917-472	R-CHIP;RH C2012 CS 472-J
R646	61079-917-472	R-CHIP;RH C2012 CS 472-J
R648	61079-917-391	R-CHIP;RH C2012 CS 391-J
R649	61079-917-274	R-CHIP;RH C2012 CS 274-J
R652	61048-177-221	R-CARBON;RD 1/8 T 221-J
R653	61079-917-224	R-CHIP;RH C2012 CS 224-J
R655	61048-177-303	R-CARBON;RD 1/8 T 303-J
R662	61048-177-102	R-CARBON;RD 1/8 T 102-J
R670	61048-177-102	R-CARBON;RD 1/8 T 102-J
R671	61048-177-102	R-CARBON;RD 1/8 T 102-J
R672	61048-177-102	R-CARBON;RD 1/8 T 102-J
R673	61048-177-102	R-CARBON;RD 1/8 T 102-J
R674	61048-177-102	R-CARBON;RD 1/8 T 102-J
R675	61079-917-471	R-CHIP;RH C2012 CS 471-J
R676	61079-917-471	R-CHIP;RH C2012 CS 471-J
R677	61048-177-102	R-CARBON;RD 1/8 T 102-J
R678	61048-177-102	R-CARBON;RD 1/8 T 102-J
R679	61048-177-102	R-CARBON;RD 1/8 T 102-J
R680	61048-177-102	R-CARBON;RD 1/8 T 102-J
R681	61048-177-102	R-CARBON;RD 1/8 T 102-J
R682	61048-177-102	R-CARBON;RD 1/8 T 102-J
R683	61048-177-102	R-CARBON;RD 1/8 T 102-J
R684	61048-177-102	R-CARBON;RD 1/8 T 102-J
R685	61048-177-102	R-CARBON;RD 1/8 T 102-J
R687	61079-917-102	R-CHIP;RH C2012 CS 102-J
R691	61048-177-102	R-CARBON;RD 1/8 T 102-J
R692	61048-177-102	R-CARBON;RD 1/8 T 102-J
R693	61048-177-102	R-CARBON;RD 1/8 T 102-J
R694	61048-177-102	R-CARBON;RD 1/8 T 102-J
R695	61048-177-102	R-CARBON;RD 1/8 T 102-J
R696	61048-177-102	R-CARBON;RD 1/8 T 102-J
R697	61048-177-102	R-CARBON;RD 1/8 T 102-J
R699	61079-917-102	R-CHIP;RH C2012 CS 102-J
SW640	66209-0008-00	SWITCH-REC;MPU 10105 MMBO 5V
XT501	B1283-0036	RESONATOR-CERAMIC;8MHZ EFOEC8004T4 3/CN
XT502	64539-021-009	CRYSTAL;32.768KHZ

SERVO PARTS

C201	61507-121-540	C-POLYESTER;CQ921M TAPG 50V 393-K
C202	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C203	61453-131-392	C-CERAMIC CHIP;0805 5C 392KAT MA
C204	61453-130-474	C-CERAMIC;CHIP;0805 5C 473MAT 050M
C205	61637-204-220	C-ELEC;CEAP 16V 22M SA
C206	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C207	61627-208-010	C-ELEC;CEAP 50V 1M NP(6X11)
C208	A1100-0015	C-CERAMIC;CHIP;2012B 152K
C209	B1102-0125	C-FILM;CQ982P 50V T 104J-40/85

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
C210	61453-130-471	C-CERAMIC;CHIP;0805 5A 471KAT MA
C211	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C212	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C213	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)
C214	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)
C215	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C216	A1100-0563	C-CERAMIC;CK 0A Y 50V T 1500-N
C217	A1100-0010	C-CERAMIC;CHIP;2012B 102K
C218	A1100-0044	C-CERAMIC;CHIP;2012B 223K
C219	61627-204-479	C-ELEC;CEAP 16V 4.7M NP(4X7)
C220	61453-131-221	C-CERAMIC;CHIP;0805 5A 221JAT MA
C221	61453-131-271	C-CERAMIC;CHIP;0805 5A 271JAT MA
C222	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C223	61637-204-220	C-ELEC;CEAP 16V 22M SA
C224	B1102-0112	C-FILM;CQ298FVT224J/ECQV1H224JZ3
C225	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J
C226	61507-121-341	C-POLYESTER;CQ921M TAPG 50V 102-J
C227	61407-117-102	C-CERAMIC;AXIAL;CAX B TAPG 102-K
C229	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C230	61637-204-220	C-ELEC;CEAP 16V 22M SA
C231	61637-204-220	C-ELEC;CEAP 16V 22M SA
C232	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
C233	61454-140-223	C-CERAMIC;CHIP;06055C 223JAT MA
C234	A1100-0017	C-CERAMIC;CHIP;2012F 104Z
CN201	63053-916-589	LEAD CONNECTOR ASSY;#26 190MM
CN202	B6010-0254	CONNECTOR WAFER;52556-0890 WHT
D201	62169-406-482	DIODE;1N4148 SAMSUNG
D202	62169-406-482	DIODE;1N4148 SAMSUNG
D207	62169-406-482	DIODE;1N4148 SAMSUNG
D209	62169-406-482	DIODE;1N4148 SAMSUNG
D210	62169-406-482	DIODE;1N4148 SAMSUNG
D211	62169-406-482	DIODE;1N4148 SAMSUNG
IC201	A4008-1017	IC;KA8325 QFP
Q201	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q202	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q203	62137-701-022	TRANSISTOR;KSR 2003 TAPG
R201	61079-917-102	R-CHIP;RH C2012 CS 102-J
R203	61079-917-000	R-CHIP;RH C2012 CS 000-J
R205	61079-917-562	R-CHIP;RH C2012 CS 562-J
R206	61048-177-472	R-CARBON;RD 1/8 T 472-J
R207	61048-177-154	R-CARBON;RD 1/8 T 154-J
R208	61048-177-394	R-CARBON;RD 1/8 T 394-J
R209	61079-917-273	R-CHIP;RH C2012 CS 273-J
R210	61079-917-393	R-CHIP;RH C2012 CS 393-J
R211	61079-917-105	R-CHIP;RH C2012 CS 105-J
R212	61079-917-274	R-CHIP;RH C2012 CS 274-J
R213	61048-177-122	R-CARBON;RD 1/8 T 122-J
R214	61048-177-102	R-CARBON;RD 1/8 T 102-J
R215	61079-917-105	R-CHIP;RH C2012 CS 105-J
R216	61079-917-105	R-CHIP;RH C2012 CS 105-J
R217	61079-917-564	R-CHIP;RH C2012 CS 564-J
R218	61079-917-473	R-CHIP;RH C2012 CS 473-J
R219	61079-917-000	R-CHIP;RH C2012 CS 000-J
R222	61079-917-102	R-CHIP;RH C2012 CS 102-J
R223	61048-177-202	R-CARBON;RD 1/8 T 202-J
R224	61079-917-105	R-CHIP;RH C2012 CS 105-J
R225	61079-917-103	R-CHIP;RH C2012 CS 103-J
R226	61048-177-431	R-CARBON;RD 1/8 T 431-J
R227	61048-177-431	R-CARBON;RD 1/8 T 431-J
R228	61048-177-474	R-CARBON;RD 1/8 T 474-J
R229	61079-917-823	R-CHIP;RH C2012 CS 823-J
R230	61079-917-823	R-CHIP;RH C2012 CS 823-J
R231	61079-917-183	R-CHIP;RH C2012 CS 183-J
R232	61079-917-154	R-CHIP;RH C2012 CS 154-J
R234	61048-177-561	R-CARBON;RD 1/8 T 561-J
R235	61048-177-683	R-CARBON;RD 1/8 T 683-J
R236	61079-917-224	R-CHIP;RH C2012 CS 224-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R713	61048-177-683	R-CARBON;RD 1/8 T 683-J
R714	61048-177-683	R-CARBON;RD 1/8 T 683-J
R715	61048-177-683	R-CARBON;RD 1/8 T 683-J
R716	61048-177-683	R-CARBON;RD 1/8 T 683-J
R717	61048-177-683	R-CARBON;RD 1/8 T 683-J
R718	61048-177-683	R-CARBON;RD 1/8 T 683-J
R719	61048-177-683	R-CARBON;RD 1/8 T 683-J
R720	61048-177-683	R-CARBON;RD 1/8 T 683-J
R721	61048-177-683	R-CARBON;RD 1/8 T 683-J
R722	61048-177-683	R-CARBON;RD 1/8 T 683-J
R723	61048-177-683	R-CARBON;RD 1/8 T 683-J
R724	61048-177-683	R-CARBON;RD 1/8 T 683-J
R725	61048-177-683	R-CARBON;RD 1/8 T 683-J
R726	61048-177-683	R-CARBON;RD 1/8 T 683-J
R727	61048-177-683	R-CARBON;RD 1/8 T 683-J
R728	61048-177-683	R-CARBON;RD 1/8 T 683-J
R729	61048-177-683	R-CARBON;RD 1/8 T 683-J
R730	61048-177-683	R-CARBON;RD 1/8 T 683-J
R735	61048-177-153	R-CARBON;RD 1/8 T 153-J
R736	61048-177-153	R-CARBON;RD 1/8 T 153-J
R740	61048-177-153	R-CARBON;RD 1/8 T 153-J
R741	61048-177-153	R-CARBON;RD 1/8 T 153-J
R742	61048-177-302	R-CARBON;RD 1/8 T 302-J
R743	61048-177-302	R-CARBON;RD 1/8 T 302-J
R777	A1006-0550	R-CARBON;RD 1/4 T 5R1-J
R778	A1006-0550	R-CARBON;RD 1/4 T 5R1-J
RM701	A1294-0015	MODULE-REMOCON;GP1U781R/ASAN 38KHZ
SW701	63599-016-070	SW-TACT;EVQ-QS2 05K
SW702	63599-016-070	SW-TACT;EVQ-QS2 05K
SW703	63599-016-070	SW-TACT;EVQ-QS2 05K
SW704	63599-016-070	SW-TACT;EVQ-QS2 05K
SW705	63599-016-070	SW-TACT;EVQ-QS2 05K
SW706	63599-016-070	SW-TACT;EVQ-QS2 05K
SW707	63599-016-070	SW-TACT;EVQ-QS2 05K
SW708	63599-016-070	SW-TACT;EVQ-QS2 05K
SW709	63599-016-070	SW-TACT;EVQ-QS2 05K
SW710	63599-016-070	SW-TACT;EVQ-QS2 05K
SW712	63599-016-070	SW-TACT;EVQ-QS2 05K
SW713	63519-102-071	SW-SLIDE;KSA 2340A/T0023002-3
SW714	63519-102-072	SW-SLIDE;KSA 2240A/T00220003-2

****

600	69357-302-374	ASSY MAIN;VXK-306/SEC
	69357-302-397	ASSY MAIN;VXK-306/SEG
	69357-302-403	ASSY MAIN;VXK-336

POWER PARTS

C151	61637-506-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C152	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C153	61637-506-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C155	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C156	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C160	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C161	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C163	61617-404-470	C-ELEC;CEAP 16V 47M RSS(6.3X7)
CN151	A6010-0406	CONNECTOR-WAFER;18-5065-009-000 BLK
D151	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D152	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D153	62169-406-482	DIODE;1N4148 SAMSUNG
D155	62169-406-482	DIODE;1N4148 SAMSUNG
D156	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D157	62169-406-482	DIODE;1N4148 SAMSUNG
IC151	62119-401-313	IC;PQ12RF11
Q152	62137-302-441	TRANSISTOR;KSC 2328-Y TAPG
Q153	62137-302-441	TRANSISTOR;KSC 2328-Y TAPG

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
Q154	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q155	62147-101-950	TRANSISTOR;KSA 643-Y TAPG
Q156	62147-401-835	TRANSISTOR;KSA 928A-Y TAPG
Q158	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q159	62137-701-012	TRANSISTOR;KSR 1003 TAPG
Q160	62147-101-950	TRANSISTOR;KSA 643-Y TAPG
R151	61048-177-223	R-CARBON;RD 1/8 T 223-J
R152	61079-917-333	R-CHIP;RH C2012 CS 333-J
R153	61048-177-102	R-CARBON;RD 1/8 T 102-J
R154	61048-177-122	R-CARBON;RD 1/8 T 122-J
R155	61048-277-271	R-CARBON;RD 1/4 T 271-J
R156	61048-177-102	R-CARBON;RD 1/8 T 102-J
R157	61048-277-102	R-CARBON;RD 1/4 T 102-J
R158	61048-177-152	R-CARBON;RD 1/8 T 152-J
R159	61048-177-392	R-CARBON;RD 1/8 T 392-J
ZD151	62169-403-821	DIODE-ZENER;MTZ 5.1B
ZD152	62169-403-838	DIODE-ZENER;MTZ27C

SYSTEM CONTROL PARTS

C601	A1100-0017	C-CERAMIC.CHIP;2012F 104Z
C602	61453-130-150	C-CERAMIC CHIP;0805 5A 15OJAT MA
C603	61453-130-150	C-CERAMIC CHIP;0805 5A 15OJAT MA
C604	61637-502-471	C-ELEC;CEAP 6.3V 470M SG(8X11.5)
C605	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C606	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C607	61637-504-102	C-ELEC;CEAP 16V 1000M SG(10X20)
C608	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C612	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C640	A1100-0015	C-CERAMIC.CHIP;2012B 152K
C641	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C643	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C645	A1100-0017	C-CERAMIC.CHIP;2012F 104Z
C651	61453-131-680	C-CERAMIC CHIP;0805 5A 68OJAT MA
C652	61453-131-680	C-CERAMIC CHIP;0805 5A 68OJAT MA
C696	A1100-0044	C-CERAMIC.CHIP;2012B 223K
C697	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C698	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C699	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
CN601	B6010-0396	CONNECTOR WAFER;HLEM 33S-1 BLK
CN603	B6010-0256	CONNECTOR WAFER;52556-0790 WHT
D601	62169-406-482	DIODE;1N4148 SAMSUNG
D604	B4104-0046	DIODE-RECT;1N4002GP 200V 1A
D605	62169-406-482	DIODE;1N4148 SAMSUNG
IC601	B4002-0282	IC-MCU;HD6433724F-B23F VX-306 QFP A3BA
IC602	62119-401-300	IC;KA8301(N,M)
IC603	62119-401-186	IC;KM93C46
IC606	62119-103-712	IC;TC4021BP
IC607	A4006-0754	IC;KA7533 DIP
L601	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L602	66639-0003-00	FERRITE-BEAD INDUCTOR;NI-ZN K150 BI3857
LD601	62309-112-043	LED IR;GL-451(SHARP)
Q601	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q602	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q641	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q643	66219-0010-00	SENSOR-PHOTO TRANSISTOR;PT 493F
Q644	66219-0010-00	SENSOR-PHOTO TRANSISTOR;PT 493F
Q646	66419-0001-00	INTERUPTER-PHOTO;SG-105LF
R601	61048-177-122	R-CARBON;RD 1/8 T 122-J
R602	61048-177-682	R-CARBON;RD 1/8 T 682-J
R604	61048-177-513	R-CARBON;RD 1/8 T 513-J
R606	61048-177-102	R-CARBON;RD 1/8 T 102-J
R607	61079-917-102	R-CHIP;RH C2012 CS 102-J
R608	61079-917-102	R-CHIP;RH C2012 CS 102-J
R609	61048-177-472	R-CARBON;RD 1/8 T 472-J
R611	61079-917-683	R-CHIP;RH C2012 CS 683-J
R612	61079-917-511	R-CHIP;RH C2012 CS 511-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R237	61048-177-103	R-CARBON;RD 1/8 T 103-J
R238	61048-177-222	R-CARBON;RD 1/8 T 222-J
R239	61048-177-752	R-CARBON;RM 1/8 T 752-J
R240	61048-177-822	R-CARBON;RD 1/8 T 822-J
R241	61048-177-912	R-CARBON;RD 1/8 T 912-J
R242	61048-177-433	R-CARBON;RD 1/8 T 433-J
R244	61048-177-433	R-CARBON;RD 1/8 T 433-J
R246	61048-177-223	R-CARBON;RD 1/8 T 223-J
R248	61079-917-562	R-CHIP;RH C2012 CS 562-J
R249	61079-917-682	R-CHIP;RH C2012 CS 682-J
R298	61079-917-102	R-CHIP;RH C2012 CS 102-J
R299	61079-917-123	R-CHIP;RH C2012 CS 123-J
VR201	61247-101-104	VR-SEMI;EVN-DJA A03B15 TAPG 100KB
ZD208	62169-423-092	DIODE-ZENER;MTZ 6.8B/UZ 6.8BH
ZD209	62169-423-092	DIODE-ZENER;MTZ 6.8B/UZ 6.8BH

TUNER PARTS

C401	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C402	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C403	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C404	B1102-0125	C-FILM;CQ962P 50V T 104J-40/85 ECQV1H104JZ3
C405	61507-121-511	C-POLYESTER;CQ921M TAPG 50V 223-J
C406	61637-206-229	C-ELEC;CEAP 50V 2.2M SA (5X11)
C407	61453-131-890	C-CERAMIC.CHIP;08055A8R2DAT050M
C408	61637-206-229	C-ELEC;CEAP 50V 2.2M SA (5X11)
C410	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C411	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C412	A1100-0017	C-CERAMIC.CHIP;2012F 104Z
C413	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C414	61454-139-479	C-CERAMIC.CHIP;08055A 4R7 JAT MA
C415	61453-131-270	C-CERAMIC.CHIP;0805 5A 270JAT MA
C416	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C417	61454-139-479	C-CERAMIC.CHIP;08055A 4R7 JAT MA
C418	61453-131-270	C-CERAMIC.CHIP;0805 5A 270JAT MA
C419	61453-131-220	C-CERAMIC.CHIP;0805 5A 220JAT MA
C420	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C421	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C430	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C4301	A1100-0009	C-CERAMIC.CHIP;2012C 101J
C4302	61407-117-103	C-CERAMIC.AXIAL;CAX B TAPG 100-K
C4304	61453-131-821	C-CERAMIC CHIP;0805 5A 82OJAT MA
C4305	61453-131-821	C-CERAMIC CHIP;0805 5A 82OJAT MA
C4306	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C4307	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C4310	61453-131-103	C-CERAMIC.CHIP;0805 5C 103KAT MA
C4311	61637-506-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C4312	61637-502-471	C-ELEC;CEAP 6.3V 470M SG(8X11.5)
C4313	61453-131-221	C-CERAMIC.CHIP;0805 5A 221JAT MA
C4314	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C477	A1100-0017	C-CERAMIC.CHIP;2012F 104Z
C488	61453-130-392	C-CERAMIC.CHIP;0805 5A 390JAT MA
C4A1	61637-506-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C4A2	B1102-0125	C-FILM;CQ962P 50V T 104J-40/85 ECQV1H104JZ3
C4A3	B1102-0125	C-FILM;CQ962P 50V T 104J-40/85 ECQV1H104JZ3
C4A4	B1102-0125	C-FILM;CQ962P 50V T 104J-40/85 ECQV1H104JZ3
C4A5	B1102-0125	C-FILM;CQ962P 50V T 104J-40/85 ECQV1H104JZ3
C4A6	61407-117-104	C-CERAMIC.AXIAL;CAX Y TAPG 16V 0.01-N
C4A7	A1104-0480	C-ELEC;CE 04 F 16V T 471-M STX/KME -40/105
C4A9	61407-117-101	C-CERAMIC.AXIAL;UP 050F 104Z
C4C00	A1100-0044	C-CERAMIC.CHIP;2012B 223K
D401	62169-406-482	DIODE;1N4148 SAMSUNG
D402	62169-406-482	DIODE;1N4148 SAMSUNG
D403	62169-406-482	DIODE;1N4148 SAMSUNG
D404	62169-406-482	DIODE;1N4148 SAMSUNG
D405	62169-406-482	DIODE;1N4148 SAMSUNG
D406	62169-406-482	DIODE;1N4148 SAMSUNG

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
D4301	62169-406-482	DIODE;1N4148 SAMSUNG
D4303	62169-406-482	DIODE;1N4148 SAMSUNG
D4305	62169-406-482	DIODE;1N4148 SAMSUNG
D4311	62169-406-482	DIODE;1N4148 SAMSUNG
FL401	B1245-0007	FILTER-SAW;SAF36.9MZW80Z PAL-B/G VF
FL402	64527-103-001	FILTER CERAMIC;SFE 5.5MB TAPG
FL403	64527-101-001	FILTER CERAMIC TRAP;TPS 5.5MB TAPG
FL404	64527-102-001	FILTER-CERAMIC TRAP;TPS 6.5MB TAPG
IC401	B4012-0046	IC-LINEAR;TDA9800 DIP NEG DEMOD
IC4301	62119-401-310	IC;KA8403
IC4A1	62119-501-561	IC-L;KA33V TAPG
JC4301	A3040-0030	JACK-SCART;ABS 94HB+BSB T0.4
L401	62427-812-109	COIL-PEAKING;EL0606RA 1uH-K
L402	62427-812-139	COIL-PEAKING;EL0606RA 1.3uH-K
L403	62427-812-569	COIL-PEAKING;EL0606RA 5.6uH-K
L404	62427-020-220	COIL PEAKING,AXIAL;LAL02TB 220J TAPG
L405	62427-812-270	COIL-PEAKING;EL0606RA 27uH-J
L406	62427-812-229	COIL-PEAKING;EL0606RA 2.2uH-K
L4302	62427-812-180	COIL-PEAKING;EL0606RA 18uH-J
L4303	62427-020-330	COIL PEAKING,AXIAL;LAL02TB 330J TAPG
L4304	62427-020-330	COIL PEAKING,AXIAL;LAL02TB 330J TAPG
L4305	62427-020-629	COIL PEAKING,AXIAL;LAL02TB 6R2J TAPG
L4A1	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L4A2	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q401	62137-702-010	TRANSISTOR;KTC 3197-AT(TAPG)
Q402	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q403	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q404	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q405	62137-701-020	TRANSISTOR;KSR 2001 TAPG
Q406	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q407	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4301	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4302	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q4303	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4304	62137-701-020	TRANSISTOR;KSR 2001 TAPG
Q4A1	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q4A4	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4A5	62137-701-020	TRANSISTOR;KSR 2001 TAPG
Q4A6	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4A7	62137-701-020	TRANSISTOR;KSR 2001 TAPG
Q4A8	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q4A9	62137-701-020	TRANSISTOR;KSR 2001 TAPG
R401	61079-917-101	R-CHIP;RH C2012 CS 101-J
R402	61079-917-271	R-CHIP;RH C2012 CS 271-J
R403	61079-917-562	R-CHIP;RH C2012 CS 562-J
R404	61079-917-152	R-CHIP;RH C2012 CS 152-J
R405	61079-917-391	R-CHIP;RH C2012 CS 391-J
R406	61079-917-470	R-CHIP;RH C2012 CS 470-J
R407	61048-177-103	R-CARBON;RD 1/8 T 103-J
R408	61079-917-472	R-CHIP;RH C2012 CS 472-J
R411	61079-917-272	R-CHIP;RH C2012 CS 272-J
R412	61079-917-222	R-CHIP;RH C2012 CS 222-J
R413	61048-177-223	R-CARBON;RD 1/8 T 223-J
R415	61079-917-331	R-CHIP;RH C2012 CS 331-J
R416	61079-917-331	R-CHIP;RH C2012 CS 331-J
R417	61048-177-113	R-CARBON;RD 1/8 T 113-J
R418	61048-177-223	R-CARBON;RD 1/8 T 223-J
R419	61048-177-561	R-CARBON;RD 1/8 T 561-J
R420	61048-177-223	R-CARBON;RD 1/8 T 223-J
R421	61079-917-223	R-CHIP;RH C2012 CS 223-J
R422	61079-917-201	R-CHIP;RH C2012 CS 201-J
R423	61079-917-151	R-CHIP;RH C2012 CS 151-J
R424	61079-917-221	R-CHIP;RH C2012 CS 221-J
R425	61079-917-103	R-CHIP;RH C2012 CS 103-J
R426	61079-917-220	R-CHIP;RH C2012 CS 220-J
R427	61079-917-101	R-CHIP;RH C2012 CS 101-J
R428	61079-917-472	R-CHIP;RH C2012 CS 472-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R4301	61079-917-433	R-CHIP;RH C2012 CS 433-J
R4302	61079-917-433	R-CHIP;RH C2012 CS 433-J
R4305	61048-177-751	R-CARBON;RD 1/8 T 751-J
R4306	61048-177-471	R-CARBON;RD 1/8 T 471-J
R4307	61048-177-222	R-CARBON;RD 1/8 T 222-J
R4308	61079-917-750	R-CHIP;RH C2012 CS 750-J
R4309	61048-177-750	R-CARBON;RD 1/8 T 750-J
R4310	61079-917-471	R-CHIP;RH C2012 CS 471-J
R4311	61079-917-471	R-CHIP;RH C2012 CS 471-J
R4312	61079-917-471	R-CHIP;RH C2012 CS 471-J
R4313	61079-917-152	R-CHIP;RH C2012 CS 152-J
R4314	61079-917-561	R-CHIP;RH C2012 CS 561-J
R4315	61048-177-241	R-CARBON;RD 1/8 T 241-J
R4316	61048-277-821	R-CARBON;RD 1/4 T 821-J
R4317	61048-177-241	R-CARBON;RD 1/8 T 241-J
R4320	61048-177-102	R-CARBON;RD 1/8 T 102-J
R4A0	61079-917-335	R-CHIP;RH C2012 CS 335-J
R4A1	61048-177-103	R-CARBON;RD 1/8 T 103-J
R4A2	61079-917-103	R-CHIP;RH C2012 CS 103-J
R4A3	61079-917-223	R-CHIP;RH C2012 CS 223-J
R4A4	61079-917-103	R-CHIP;RH C2012 CS 103-J
R4A6	61079-917-103	R-CHIP;RH C2012 CS 103-J
R4A7	61079-917-103	R-CHIP;RH C2012 CS 103-J
R4A8	61079-917-103	R-CHIP;RH C2012 CS 103-J
R4B1	61079-917-335	R-CHIP;RH C2012 CS 335-J
R4B2	61079-917-335	R-CHIP;RH C2012 CS 335-J
R4B3	61079-917-104	R-CHIP;RH C2012 CS 104-J
R4B4	61079-917-124	R-CHIP;RH C2012 CS 124-J
R4B5	61079-917-223	R-CHIP;RH C2012 CS 223-J
R4B6	61079-917-223	R-CHIP;RH C2012 CS 223-J
R4B7	61079-917-223	R-CHIP;RH C2012 CS 223-J
R4B8	61048-177-122	R-CARBON;RD 1/8 T 122-J
TL401	A1197-0004	TRANS-DET;9MM 0UH BLK 8PF 77.9MHZ M7T1
TL402	A1134-0017	COIL-TRAP;40.4MHZ 0.45UH 9PF 7MG Q60
TL403	A1134-0018	COIL-TRAP;32.4MHZ 0.45UH 9PF 7MG Q60
VR401	61247-101-103	VR-SEMI;EVN-DJA A03 B14 TAPG 10KB
ZD4301	62169-403-824	DIODE-ZENER;MTZ 9.1B

AUDIO PARTS

C501	61507-121-350	C-POLTESTER;CQ921M TAPG 50V 122-K
C504	61637-204-330	C-ELEC;CEAP 16V 33M SA(5X11)
C505	61507-121-470	C-POLYESTER;CQ921M TAPG 50V 103-K
C506	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C507	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C508	61637-208-478	C-ELEC;CEAP 50V 0.47M SA(5X11)
C509	61637-208-478	C-ELEC;CEAP 50V 0.47M SA(5X11)
C510	61507-121-460	C-POLYESTER;CQ921M TAPG 50V 822-K
C511	61507-121-450	C-POLYESTER;CQ921M TAPG 50V 682-K
C512	61507-121-450	C-POLYESTER;CQ921M TAPG 50V 682-K
C513	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C514	61507-121-460	C-POLYESTER;CQ921M TAPG 50V 822-K
C516	61637-206-100	C-ELEC;CEAP 35V 10M SA(5X11)
C517	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
C518	61637-505-101	C-ELEC;CEAP 25V 100M SG(6.3X11)
C519	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C520	61507-121-371	C-POLYESTER;CQ921M TAPG 50V 182-J
C521	61507-121-630	C-POLTESTER;CQ921M TAPG 50V 123-K
C522	61453-131-221	C-CERAMIC;CHIP;0805 5A 221JAT MA
C523	61507-339-010	C-POLYESTER;MDX 100V TAPG 473-K
C525	61507-121-470	C-POLYESTER;CQ921M TAPG 50V 103-K
C526	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)
CN501	63054-307-160	FLAT WIRE;UL2678 #26-07P 160
CN502	B6010-0436	CONNECTOR-WAFER;TMC-E02X-A1 BLK STICK
IC501	B4008-0751	IC;LA7285 DIP
L501	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J
L502	62427-813-153	COIL-PEAKING;EL0607RA 15mH-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
L504	62427-812-101	COIL-PEAKING;EL0606RA 100uH-J
L505	62427-014-136	COIL-BIAS OSC;269QN-K5022 YCT STICK
L506	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
Q501	62137-702-020	TRANSISTOR;KSC 1008-Y TAPG
Q502	62137-701-020	TRANSISTOR;KSR 2001 TAPG
Q503	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q505	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q506	62137-701-013	TRANSISTOR;KSR 1004 TAPG
R501	61048-177-473	R-CARBON;RD 1/8 T 473-J
R503	61048-177-820	R-CARBON;RD 1/8 T 820-J
R504	61079-917-103	R-CHIP;RH C2012 CS 103-J
R505	61079-917-122	R-CHIP;RH C2012 CS 122-J
R506	61079-917-103	R-CHIP;RH C2012 CS 103-J
R507	61048-177-475	R-CARBON;RD 1/8 T 475-J
R508	61079-917-123	R-CHIP;RH C2012 CS 123-J
R510	61079-917-123	R-CHIP;RH C2012 CS 123-J
R514	61079-917-273	R-CHIP;RH C2012 CS 273-J
R515	61079-917-472	R-CHIP;RH C2012 CS 472-J
R516	61079-917-471	R-CHIP;RH C2012 CS 471-J
R519	61048-177-183	R-CARBON;RD 1/8 T 183-J
R520	61048-177-103	R-CARBON;RD 1/8 T 103-J
R521	61048-177-103	R-CARBON;RD 1/8 T 103-J
R522	61048-177-473	R-CARBON;RD 1/8 T 473-J
R523	61048-177-479	R-CARBON;RD 1/8 T 4R7-J
R524	61079-917-102	R-CHIP;RH C2012 CS 102-J
R526	61079-917-223	R-CHIP;RH C2012 CS 223-J
R527	61079-917-223	R-CHIP;RH C2012 CS 223-J
R529	61079-917-334	R-CHIP;RH C2012 CS 334-J
VR501	61247-101-473	VR-SEMI;EVN-DJA A03 BQ4 TAPG 47KB

LUMA/CHROMA PARTS

C3V01	61453-131-181	C-CERAMIC CHIP;0805 5A 181JAT MA
C3V02	61453-131-471	C-CERAMIC;CHIP;0805 5A 470JAT MA
C3V03	61453-130-392	C-CERAMIC;CHIP;0805 5A 390JAT MA
C3V04	61407-117-560	C-CERAMIC;AXIAL;CAX SL TAPG 50V 56-J
C3V05	61627-204-100	C-ELEC;CEAP 16V 10M NP(6X11)
C3V06	61453-131-391	C-CERAMIC;CHIP;0805 5A 391JAT MA
C3V08	61453-131-270	C-CERAMIC;CHIP;0805 5A 270JAT MA
C3V09	61407-117-560	C-CERAMIC;AXIAL;CAX SL TAPG 50V 56-J
C3V10	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V11	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V12	61637-608-338	C-ELEC;CEAP 50V 0.33M SV(5X9)
C3V13	61453-130-223	C-CERAMIC;CHIP;0805 5C 223KAT MA
C3V14	61507-121-511	C-POLYESTER;CQ921M TAPG 50V 223-J
C3V15	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
C3V16	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3V17	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3V18	61507-121-550	C-POLYESTER;CQ921M TAPG 50V 473-K
C3V19	61453-130-223	C-CERAMIC;CHIP;0805 5C 223KAT MA
C3V20	A1100-0080	C-CERAMIC;CHIP;CC 75 COG 50V T 820-J C2012
C3V21	A1100-0009	C-CERAMIC;CHIP;2012C 101J
C3V23	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V24	61637-208-479	C-ELEC;CEAP 50V 4.7M SA(5X11)
C3V25	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3V26	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3V27	61407-101-320	C-CERAMIC TEMP;CC45 SL TAPG 50V 82-J
C3V29	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C3V30	61637-208-339	C-ELEC;CEAP 50V 3.3M SA(5X11)
C3V31	61637-208-019	C-ELEC;CEAP 50V 0.1M SA(5X11)
C3V32	61507-121-571	C-POLYESTER;CQ921M TAPG 50V 683-J
C3V33	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
C3V34	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C3V35	61453-130-223	C-CERAMIC;CHIP;0805 5C 223KAT MA
C3V36	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V37	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C3V38	A1100-0017	C-CERAMIC;CHIP;2012F 104Z

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
C3V39	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V40	61637-204-100	C-ELEC;CEAP 16V 10M SA(5X11)
C3V41	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3V42	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
C3V43	61453-131-471	C-CERAMIC;CHIP;0805 5A 470JAT MA
C3V45	61453-131-220	C-CERAMIC;CHIP;0805 5A 220JAT MA
C3V46	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3V47	61407-117-101	C-CERAMIC;AXIAL;UP 050F 104Z
C3V48	61507-121-511	C-POLYESTER;CQ921M TAPG 50V 223-J
C3V49	61407-117-228	C-CERAMIC;AXIAL;CK OA F 25V 223Z/F 25V 203ZT
C3V50	61407-117-104	C-CERAMIC;AXIAL;CAX Y TAPG 16V 0.01-N
C3V51	61407-117-102	C-CERAMIC;AXIAL;CAX B TAPG 102-K
D3V01	62169-406-482	DIODE;1N4148 SAMSUNG
D3V04	62169-406-482	DIODE;1N4148 SAMSUNG
D3V98	62169-406-482	DIODE;1N4148 SAMSUNG
D3V99	62169-406-482	DIODE;1N4148 SAMSUNG
FL3V01	64569-006-011	DELAY LINE;MS-31PC-5K
IC3V01	B4008-0894	IC;LA7397 DIP
IC3V02	B4008-0432	IC;MSM7403RS SIP
L3V01	62427-020-330	COIL;PEAKING;AXIAL;LAL02TB 330J TAPG
L3V02	62427-020-680	COIL;PEAKING;AXIAL;LAL02TB 680J TAPG
L3V04	62427-020-339	COIL;PEAKING;AXIAL;LAL02TB 3R3J TAPG
L3V05	62427-020-150	COIL;PEAKING;AXIAL;LAL02TB 150J TAPG
L3V07	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L3V08	62427-020-221	COIL;PEAKING;AXIAL;LAL02TB 221J TAPG
L3V09	62427-020-150	COIL;PEAKING;AXIAL;LAL02TB 150J TAPG
L3V10	62427-020-221	COIL;PEAKING;AXIAL;LAL02TB 221J TAPG
Q3V01	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q3V02	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q3V03	62137-701-013	TRANSISTOR;KSR 1004 TAPG
Q3V04	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3V05	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3V06	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
Q3V08	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3V14	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q3V15	62137-701-013	TRANSISTOR;KSR 1004 TAPG
R3V01	61079-917-682	R-CHIP;RH C2012 CS 682-J
R3V02	61079-917-182	R-CHIP;RH C2012 CS 182-J
R3V03	61079-917-122	R-CHIP;RH C2012 CS 122-J
R3V04	61079-917-472	R-CHIP;RH C2012 CS 472-J
R3V05	61079-917-102	R-CHIP;RH C2012 CS 102-J
R3V06	61048-177-222	R-CARBON;RD 1/8 T 222-J
R3V07	61048-177-222	R-CARBON;RD 1/8 T 222-J
R3V08	61079-917-272	R-CHIP;RH C2012 CS 272-J
R3V09	61079-917-681	R-CHIP;RH C2012 CS 681-J
R3V11	61079-917-105	R-CHIP;RH C2012 CS 105-J
R3V12	61079-917-822	R-CHIP;RH C2012 CS 822-J
R3V13	61079-917-152	R-CHIP;RH C2012 CS 152-J
R3V14	61079-917-182	R-CHIP;RH C2012 CS 182-J
R3V15	61048-177-823	R-CARBON;RD 1/8 T 823-J
R3V16	61079-917-222	R-CHIP;RH C2012 CS 222-J
R3V17	61079-917-102	R-CHIP;RH C2012 CS 102-J
R3V18	61079-917-271	R-CHIP;RH C2012 CS 271-J
R3V19	61079-917-102	R-CHIP;RH C2012 CS 102-J
R3V20	61079-917-102	R-CHIP;RH C2012 CS 102-J
R3V21	61079-917-223	R-CHIP;RH C2012 CS 223-J
R3V22	61048-177-271	R-CARBON;RD 1/8 T 271-J
R3V23	61079-917-102	R-CHIP;RH C2012 CS 102-J
R3V24	61079-917-332	R-CHIP;RH C2012 CS 332-J
R3V25	61079-917-222	R-CHIP;RH C2012 CS 222-J
R3V26	61048-177-622	R-CARBON;RD 1/8 T 622-J
R3V27	61079-917-202	R-CHIP;RH C2012 CS 202-J
R3V28	61079-917-103	R-CHIP;RH C2012 CS 103-J
R3V29	61048-177-103	R-CARBON;RD 1/8 T 103-J
R3V31	61048-177-273	R-CARBON;RD 1/8 T 273-J
R3V32	61048-177-472	R-CARBON;RD 1/8 T 472-J
R3V33	61048-177-102	R-CARBON;RD 1/8 T 102-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R3V34	61048-177-333	R-CARBON;RD 1/8 T 333-J
R3V35	61079-917-183	R-CHIP;RH C2012 CS 183-J
R3V36	61048-177-102	R-CARBON;RD 1/8 T 102-J
R3V39	61048-177-751	R-CARBON;RD 1/8 T 751-J
VR3V01	61247-101-222	VR-SEMI;EVN-DJA A03 BE3 TAPG 2.2KB
VR3V02	61247-101-103	VR-SEMI;EVN-DJA A03 B14 TAPG 10KB
VR3V03	61247-101-103	VR-SEMI;EVN-DJA A03 B14 TAPG 10KB
VR3V04	61247-101-103	VR-SEMI;EVN-DJA A03 B14 TAPG 10KB
XT3V01	64539-012-079	X-TAL;4.43 3619MHZ 8PPM TAPG

OSD PARTS

C901	61637-208-228	C-ELEC;CEAP 50V 0.22M SA(5X11)
C903	61637-204-470	C-ELEC;CEAP 16V 47M SA(5X11)
C904	61637-505-101	C-ELEC;CEAP 25V 100M SG(6.3X11)
C905	A1100-0044	C-CERAMIC;CHIP;2012B 223K
C906	61637-504-101	C-ELEC;CEAP 16V 100M SG(6.3X11)
C907	A1100-0044	C-CERAMIC;CHIP;2012B 223K
C908	61637-506-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C911	61453-131-220	C-CERAMIC;CHIP;0805 5A 220JAT MA
C912	61453-131-270	C-CERAMIC;CHIP;0805 5A 270JAT MA
C913	61637-208-478	C-ELEC;CEAP 50V 0.47M SA(5X11)
C915	61637-208-010	C-ELEC;CEAP 50V 1M SA(5X11)
C916	61453-130-121	C-CERAMIC;CHIP;0805 5A 121JAT MA
C917	A1100-0044	C-CERAMIC;CHIP;2012B 223K
C918	61453-131-330	C-CERAMIC;CHIP;0805 5A 330JAT MA
C919	A1100-0503	C-CERAMIC;CK OA X 16V T 682-N 16V 682-N
C920	61453-131-270	C-CERAMIC;CHIP;0805 5A 270JAT MA
C921	61627-208-010	C-ELEC;CEAP 50V 1M NP(6X11)
C923	61453-131-890	C-CERAMIC;CHIP;0805SA8R2DAT050M
C997	61637-508-470	C-ELEC;CEAP 50V 47M SG(6.3X11)
C998	61453-131-330	C-CERAMIC;CHIP;0805 5A 330JAT MA
C9A2	61453-131-103	C-CERAMIC;CHIP;0805 5C 103KAT MA
D901	62169-406-482	DIODE;1N4148 SAMSUNG
D902	62169-406-482	DIODE;1N4148 SAMSUNG
D903	62169-406-482	DIODE;1N4148 SAMSUNG
IC901	B4008-1050	IC;LC74790-9024 DIP
L902	62429-833-101	COIL-PEAKING AXIAL;BAL04ST 101K
L903	62427-020-330	COIL;PEAKING;AXIAL;LAL02TB 330J TAPG
L904	62427-020-569	COIL;PEAKING;AXIAL;LAL02TB 5R6J TAPG
Q901	62137-302-740	TRANSISTOR;KSC 945-Y TAPG
Q902	62137-103-380	TRANSISTOR;KSA 733-Y TAPG
R901	61079-917-153	R-CHIP;RH C2012 CS 153-J
R902	61079-917-563	R-CHIP;RH C2012 CS 563-J
R903	61048-177-621	R-CARBON;RD 1/8 T 621-J
R904	61079-917-393	R-CHIP;RH C2012 CS 393-J
R905	61048-177-223	R-CARBON;RD 1/8 T 223-J
R906	61048-177-121	R-CARBON;RD 1/8 T 121-J
R908	61048-177-473	R-CARBON;RD 1/8 T 473-J
R909	61079-917-272	R-CHIP;RH C2012 CS 272-J
R910	61048-177-102	R-CARBON;RD 1/8 T 102-J
R911	61079-917-121	R-CHIP;RH C2012 CS 121-J
R915	61079-917-102	R-CHIP;RH C2012 CS 102-J
R916	61079-917-682	R-CHIP;RH C2012 CS 682-J
R917	61048-177-222	R-CARBON;RD 1/8 T 222-J
R918	61079-917-152	R-CHIP;RH C2012 CS 152-J
R920	61079-917-103	R-CHIP;RH C2012 CS 103-J
R921	61079-917-393	R-CHIP;RH C2012 CS 393-J
R922	61079-917-474	R-CHIP;RH C2012 CS 474-J
R999	61079-917-000	R-CHIP;RH C2012 CS 000-J
VC901	61829-302-292	C-TRIMMER;ECR-HA020D41
XT901	64539-012-543	CRYSTAL;17.734475M(20ppm)

****

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
601	69312-302-236	ASSY PREAMP:VXK-306
C301	61617-404-101	C-ELEC:CEAP 16V 100M RSS(6.3X7)
C302	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C303	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C304	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C305	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C307	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C309	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C310	61407-105-320	C-CERAMIC.TEMP:CC45 CH TAPG 50V 82-J
C311	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C312	61407-105-320	C-CERAMIC.TEMP:CC45 CH TAPG 50V 82-J
C317	61407-117-184	C-CERAMIC.AXIAL:CAX B TAPG 50V 180-K
C319	61407-117-270	C-CERAMIC.AXIAL:CK OA B 50V 271K/B
C320	61407-117-150	C-CERAMIC.AXIAL:CAX SL TAPG 50V 15-J
C321	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C322	61407-105-320	C-CERAMIC.TEMP:CC45 CH TAPG 50V 82-J
C323	61407-117-470	C-CERAMIC.AXIAL:CAX SL TAPG 50V 47-J
C324	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C327	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C328	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C329	61407-117-223	C-CERAMIC.AXIAL:CAX B TAPG 50V 220-K
C330	61407-117-100	C-CERAMIC.AXIAL:CAX SL TAPG 50V 10-J
C331	61407-117-154	C-CERAMIC.AXIAL:CAX B TAPG 50V 150-K
C332	61407-105-120	C-CERAMIC.TEMP:CC45 CH TAPG 50V 120-J
C333	61407-105-150	C-CERAMIC.TEMP:CC45 CH TAPG 50V 15-J
C334	61407-105-320	C-CERAMIC.TEMP:CC45 CH TAPG 50V 82-J
C335	61407-117-184	C-CERAMIC.AXIAL:CAX B TAPG 50V 180-K
C336	61407-117-154	C-CERAMIC.AXIAL:CAX B TAPG 50V 150-K
C338	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C339	61617-404-470	C-ELEC:CEAP 16V 47M RSS(6.3X7)
C340	61407-105-120	C-CERAMIC.TEMP:CC45 CH TAPG 50V 120-J
C341	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C342	61617-404-470	C-ELEC:CEAP 16V 47M RSS(6.3X7)
C343	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C344	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C345	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
CN301	63348-231-040	CONNECTOR-WAFER:52045-0410
CN302	A5010-0365	CONNECTOR-WAFER.GC200-15PLS WHT
D301	62169-406-482	DIODE:1N4148 SAMSUNG
D302	62169-406-482	DIODE:1N4148 SAMSUNG
IC301	B4008-0598	IC-LINEAR.LA7374 SIP PRE-AMP
L301	62427-812-101	COIL-PEAKING:EL0606RA 100uH-J
L302	62427-812-331	COIL-PEAKING:EL0606RA 330uH-J
L304	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L305	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L306	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L309	62427-812-471	COIL-PEAKING:EL0606RA 470uH-J
L310	62427-020-221	COIL PEAKING.AXIAL:LAL02TB 221J TAPG
L311	62427-020-151	COIL PEAKING.AXIAL:LAL02TB 151J TAPG
L312	62427-020-330	COIL PEAKING.AXIAL:LAL02TB 330J TAPG
L313	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L314	62427-020-101	COIL PEAKING.AXIAL:LAL02TB 101J TAPG
L315	62427-020-221	COIL PEAKING.AXIAL:LAL02TB 221J TAPG
L316	62427-020-820	COIL PEAKING.AXIAL:LAL02TB 820J TAPG
L317	62427-812-101	COIL-PEAKING:EL0606RA 100uH-J
L318	62427-812-101	COIL-PEAKING:EL0606RA 100uH-J
Q301	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q302	62137-103-380	TRANSISTOR:KSA 733-Y TAPG
Q303	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q304	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q305	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q306	62137-103-380	TRANSISTOR:KSA 733-Y TAPG
Q310	62137-103-380	TRANSISTOR:KSA 733-Y TAPG
R301	61048-177-102	R-CARBON:RD 1/8 T 102-J
R302	61048-177-223	R-CARBON:RD 1/8 T 223-J
R303	61048-177-223	R-CARBON:RD 1/8 T 223-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R304	61048-177-473	R-CARBON:RD 1/8 T 473-J
R306	61048-177-562	R-CARBON:RD 1/8 T 562-J
R307	61048-177-102	R-CARBON:RD 1/8 T 102-J
R309	61048-177-223	R-CARBON:RD 1/8 T 223-J
R311	61048-177-102	R-CARBON:RD 1/8 T 102-J
R312	61048-177-222	R-CARBON:RD 1/8 T 222-J
R313	61048-177-222	R-CARBON:RD 1/8 T 222-J
R314	61048-177-391	R-CARBON:RD 1/8 T 391-J
R315	61048-177-391	R-CARBON:RD 1/8 T 391-J
R316	61048-177-561	R-CARBON:RD 1/8 T 561-J
R317	61048-177-561	R-CARBON:RD 1/8 T 561-J
R318	61048-177-511	R-CARBON:RD 1/8 T 511-J
R319	61048-177-561	R-CARBON:RD 1/8 T 561-J
R321	61048-177-102	R-CARBON:RD 1/8 T 102-J
R322	61048-177-273	R-CARBON:RD 1/8 T 273-J
R323	61048-177-123	R-CARBON:RD 1/8 T 123-J
R324	61048-177-102	R-CARBON:RD 1/8 T 102-J
R325	61048-177-181	R-CARBON:RD 1/8 T 181-J
R326	61048-177-471	R-CARBON:RD 1/8 T 471-J
R327	61048-177-102	R-CARBON:RD 1/8 T 102-J
R328	61048-177-271	R-CARBON:RD 1/8 T 271-J
R329	61048-177-102	R-CARBON:RD 1/8 T 102-J
R330	61048-177-122	R-CARBON:RD 1/8 T 122-J
R331	61048-177-102	R-CARBON:RD 1/8 T 102-J
R333	61048-177-333	R-CARBON:RD 1/8 T 333-J
R334	61048-177-333	R-CARBON:RD 1/8 T 333-J
R335	61048-177-152	R-CARBON:RD 1/8 T 152-J
R336	61048-177-222	R-CARBON:RD 1/8 T 222-J
R337	61048-177-182	R-CARBON:RD 1/8 T 182-J
R338	61048-177-561	R-CARBON:RD 1/8 T 561-J
R340	61048-177-333	R-CARBON:RD 1/8 T 333-J
R341	61048-177-333	R-CARBON:RD 1/8 T 333-J
R342	61048-177-152	R-CARBON:RD 1/8 T 152-J
R343	61048-177-392	R-CARBON:RD 1/8 T 392-J
R344	61048-177-391	R-CARBON:RD 1/8 T 391-J
R345	61048-177-103	R-CARBON:RD 1/8 T 103-J
R346	61048-177-222	R-CARBON:RD 1/8 T 222-J
R347	61048-177-222	R-CARBON:RD 1/8 T 222-J

****

601	69312-302-243	ASSY PREAMP:VXK-336
C301	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C302	A1100-0010	C-CERAMIC.CHIP:2012B 102K
C303	A1100-0080	C-CERAMIC.CHIP:CC 73 COG 50V T 820-J C2012
C304	A1100-0080	C-CERAMIC.CHIP:CC 73 COG 50V T 820-J C2012
C305	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C306	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C307	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C308	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C309	61453-131-220	C-CERAMIC.CHIP:0805 5A 220JAT MA
C310	61453-131-220	C-CERAMIC.CHIP:0805 5A 220JAT MA
C311	A1100-0010	C-CERAMIC.CHIP:2012B 102K
C313	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C314	61453-131-680	C-CERAMIC.CHIP:0805 5A 680JAT MA
C315	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C316	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C317	61407-117-120	C-CERAMIC.AXIAL:CAX SL TAPG 50V 12-J
C318	61453-131-220	C-CERAMIC.CHIP:0805 5A 220JAT MA
C319	61453-130-474	C-CERAMIC.CHIP:0805 5C 473MAT 050M
C320	61407-117-100	C-CERAMIC.AXIAL:CAX SL TAPG 50V 10-J
C321	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C322	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C323	61617-404-101	C-ELEC:CEAP 16V 100M RSS(6.3X7)
C324	61453-131-180	C-CERAMIC.CHIP:0805 5A 180JAT MA
C325	61407-117-154	C-CERAMIC.AXIAL:CAX B TAPG 50V 150-K

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
C326	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C327	A1100-0017	C-CERAMIC.CHIP:2012F 104Z
C328	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C337	61407-117-184	C-CERAMIC.AXIAL:CAX B TAPG 50V 180-K
C350	61407-117-104	C-CERAMIC.AXIAL:CAX Y TAPG 16V 0.01-N
C352	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C353	61407-117-223	C-CERAMIC.AXIAL:CAX B TAPG 50V 220-K
C354	61407-117-154	C-CERAMIC.AXIAL:CAX B TAPG 50V 150-K
C355	61407-105-120	C-CERAMIC.TEMP:CC45 CH TAPG 50V 120-J
C356	A1100-0008	C-CERAMIC.CHIP:CC 73 COG 50V T 100-J C2012
C357	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C362	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C363	A1100-0080	C-CERAMIC.CHIP:CC 73 COG 50V T 820-J C2012
C364	A1100-0053	C-CERAMIC.CHIP:CC 73 COG 50V T 390-J C2012
C365	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C366	61453-131-181	C-CERAMIC.CHIP:0805 5A 181JAT MA
C367	61407-117-101	C-CERAMIC.AXIAL:UP 050F 104Z
C370	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C371	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C372	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C373	61617-408-010	C-ELEC:CEAP 50V 1M RSS(4X7)
C374	61617-404-101	C-ELEC:CEAP 16V 100M RSS(6.3X7)
C375	61617-404-101	C-ELEC:CEAP 16V 100M RSS(6.3X7)
C398	61453-131-103	C-CERAMIC.CHIP:0805 5C 103KAT MA
C399	61453-130-121	C-CERAMIC.CHIP:0805 5A 121JAT MA
CN301	63348-231-060	CONNECTOR-WAFER:52045-0610
CN302	A5010-0365	CONNECTOR-WAFER:GC200-15PLS WHT
IC301	B4012-0044	IC-LINEAR:BA7277S DIP Y/C PRE AMP
L301	62427-020-560	COIL PEAKING.AXIAL:LAL02TB 56J TAPG
L302	62427-020-151	COIL PEAKING.AXIAL:LAL02TB 151J TAPG
L303	62427-020-101	COIL PEAKING.AXIAL:LAL02TB 101J TAPG
L304	62427-020-330	COIL PEAKING.AXIAL:LAL02TB 33J TAPG
L305	62427-812-471	COIL-PEAKING:EL0606RA 470uH-J
L306	62427-020-221	COIL PEAKING.AXIAL:LAL02TB 221J TAPG
L307	62427-020-180	COIL PEAKING.AXIAL:LAL02TB 18J TAPG
L309	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L310	62427-020-220	COIL PEAKING.AXIAL:LAL02TB 220J TAPG
L311	62427-020-221	COIL PEAKING.AXIAL:LAL02TB 221J TAPG
L312	62427-812-331	COIL-PEAKING:EL0606RA 330uH-J
L399	62427-020-820	COIL PEAKING.AXIAL:LAL02TB 820J TAPG
Q301	62137-103-380	TRANSISTOR:KSA 733-Y TAPG
Q302	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q303	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q304	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q305	62137-701-020	TRANSISTOR:KSR 2001 TAPG
Q306	62137-701-013	TRANSISTOR:KSR 1004 TAPG
Q307	62147-101-950	TRANSISTOR:KSA 643-Y TAPG
Q308	62137-701-013	TRANSISTOR:KSR 1004 TAPG
Q309	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
Q310	62137-701-013	TRANSISTOR:KSR 1004 TAPG
Q311	62137-103-380	TRANSISTOR:KSA 733-Y TAPG
Q312	62137-701-013	TRANSISTOR:KSR 1004 TAPG
Q313	62137-701-013	TRANSISTOR:KSR 1004 TAPG
Q315	62137-701-013	TRANSISTOR:KSR 1004 TAPG
R301	61079-917-102	R-CHIP:RH C2012 CS 102-J
R302	61079-917-102	R-CHIP:RH C2012 CS 102-J
R303	61079-917-471	R-CHIP:RH C2012 CS 471-J
R304	61079-917-471	R-CHIP:RH C2012 CS 471-J
R305	61079-917-121	R-CHIP:RH C2012 CS 121-J
R306	61079-917-121	R-CHIP:RH C2012 CS 121-J
R307	61048-177-102	R-CARBON:RD 1/8 T 102-J
R308	61079-917-511	R-CHIP:RH C2012 CS 511-J
R309	61079-917-101	R-CHIP:RH C2012 CS 101-J
R310	61048-177-511	R-CARBON:RD 1/8 T 511-J
R311	61079-917-471	R-CHIP:RH C2012 CS 471-J
R312	61079-917-242	R-CHIP:RH C2012 CS 242-J
R313	61079-917-561	R-CHIP:RH C2012 CS 561-J

LOCA.NO	PART-NUMBER	DESCRIPTION / SPECIFICATION
R314	61079-917-511	R-CHIP:RH C2012 CS 511-J
R315	61048-177-561	R-CARBON:RD 1/8 T 561-J
R317	61079-917-681	R-CHIP:RH C2012 CS 681-J
R318	61048-177-102	R-CARBON:RD 1/8 T 102-J
R319	61048-177-222	R-CARBON:RD 1/8 T 222-J
R320	61079-917-471	R-CHIP:RH C2012 CS 471-J
R321	61048-177-333	R-CARBON:RD 1/8 T 333-J
R322	61079-917-333	R-CHIP:RH C2012 CS 333-J
R323	61079-917-152	R-CHIP:RH C2012 CS 152-J
R324	61079-917-751	R-CHIP:RH C2012 CS 751-J
R325	61079-917-561	R-CHIP:RH C2012 CS 561-J
R327	61079-917-751	R-CHIP:RH C2012 CS 751-J
R328	61048-177-181	R-CARBON:RD 1/8 T 181-J
R329	61079-917-152	R-CHIP:RH C2012 CS 152-J
R330	61079-917-102	R-CHIP:RH C2012 CS 102-J
R335	61079-917-333	R-CHIP:RH C2012 CS 333-J
R344	61079-917-271	R-CHIP:RH C2012 CS 271-J
R345	61079-917-102	R-CHIP:RH C2012 CS 102-J
R346	61079-917-181	R-CHIP:RH C2012 CS 181-J
R347	61079-917-273	R-CHIP:RH C2012 CS 273-J
R348	61079-917-102	R-CHIP:RH C2012 CS 102-J
R349	61079-917-471	R-CHIP:RH C2012 CS 471-J
R350	61079-917-123	R-CHIP:RH C2012 CS 123-J
R351	61079-917-202	R-CHIP:RH C2012 CS 202-J
R352	61048-177-202	R-CARBON:RD 1/8 T 202-J
R354	61079-917-152	R-CHIP:RH C2012 CS 152-J
R355	61079-917-333	R-CHIP:RH C2012 CS 333-J
R356	61079-917-152	R-CHIP:RH C2012 CS 152-J
R358	61048-177-102	R-CARBON:RD 1/8 T 102-J
R360	61079-917-152	R-CHIP:RH C2012 CS 152-J
R361	61079-917-392	R-CHIP:RH C2012 CS 392-J
R370	61079-917-152	R-CHIP:RH C2012 CS 152-J
R371	61079-917-392	R-CHIP:RH C2012 CS 392-J
R398	61048-177-242	R-CARBON:RM 1/8 T 242-J
R399	61079-917-122	R-CHIP:RH C2012 CS 122-J

****

602	69327-302-201	ASSY VPS:VPS W-2PAL
C6101	61637-204-470	C-ELEC:CEAP 16V 47M SA(5X11)
C6102	61507-121-470	C-POLYESTER:CQ921M TAPG 50V 103-K
C6103	61417-109-210	C-CERAMIC.HK:CK45F TAPG 50V 104-Z
C6104	61507-121-430	C-POLYESTER:CQ921M TAPG 50V 472-K
C6105	61407-101-510	C-CERAMIC.TEMP:CC45 SL TAPG 50V 470-J
C6106	61507-121-341	C-POLYESTER:CQ921M TAPG 50V 102-J
C6107	61507-121-530	C-POLYESTER:CQ921M TAPG 50V 333-K
C6108	61507-121-470	C-POLYESTER:CQ921M TAPG 50V 103-K
C6109	61637-204-100	C-ELEC:CEAP 16V 10M SA(5X11)
CN6101	A5010-0261	CONNECTOR WAFER:GC200-5P-LS WHT
IC6101	62119-403-013	IC:SAA4700(VPS)
L6101	62429-833-101	COIL-PEAKING AXIAL:BAL04ST 101K
Q6101	62137-302-740	TRANSISTOR:KSC 945-Y TAPG
R6101	61048-177-103	R-CARBON:RD 1/8 T 103-J
R6102	61048-177-103	R-CARBON:RD 1/8 T 103-J
R6103	61048-177-823	R-CARBON:RD 1/8 T 823-J
R6104	61048-177-103	R-CARBON:RD 1/8 T 103-J
R6105	61048-177-103	R-CARBON:RD 1/8 T 103-J
R6106	61048-177-472	R-CARBON:RD 1/8 T 472-J
R6107	61048-177-362	R-CARBON:RD 1/8 T 362-J
R6108	61048-177-222	R-CARBON:RD 1/8 T 222-J
R6109	61048-177-222	R-CARBON:RD 1/8 T 222-J
R6110	61048-177-102	R-CARBON:RD 1/8 T 102-J

****

6. MECHANICAL EXPLODED VIEW/ PARTS LIST

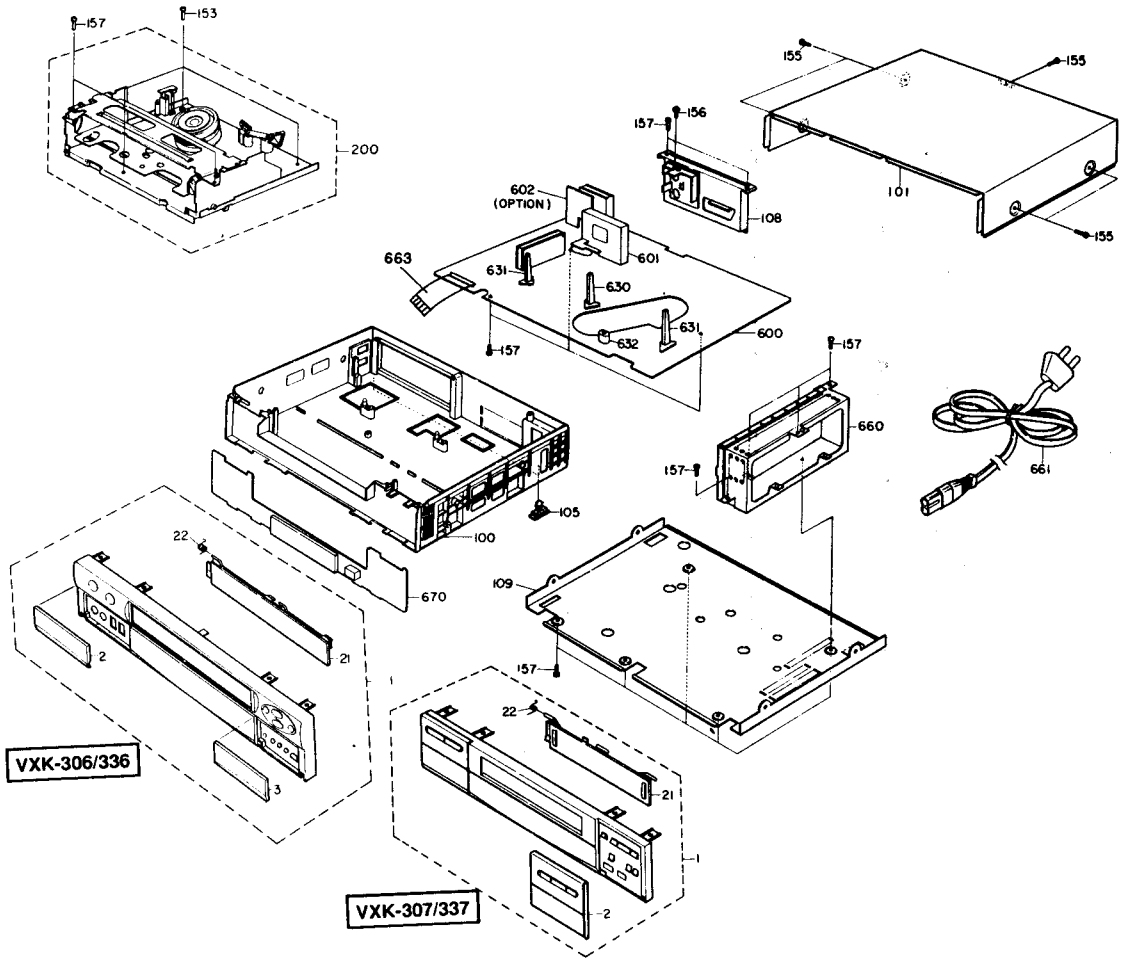
Page

6-1. Instrument Assembly ---------- 6-2

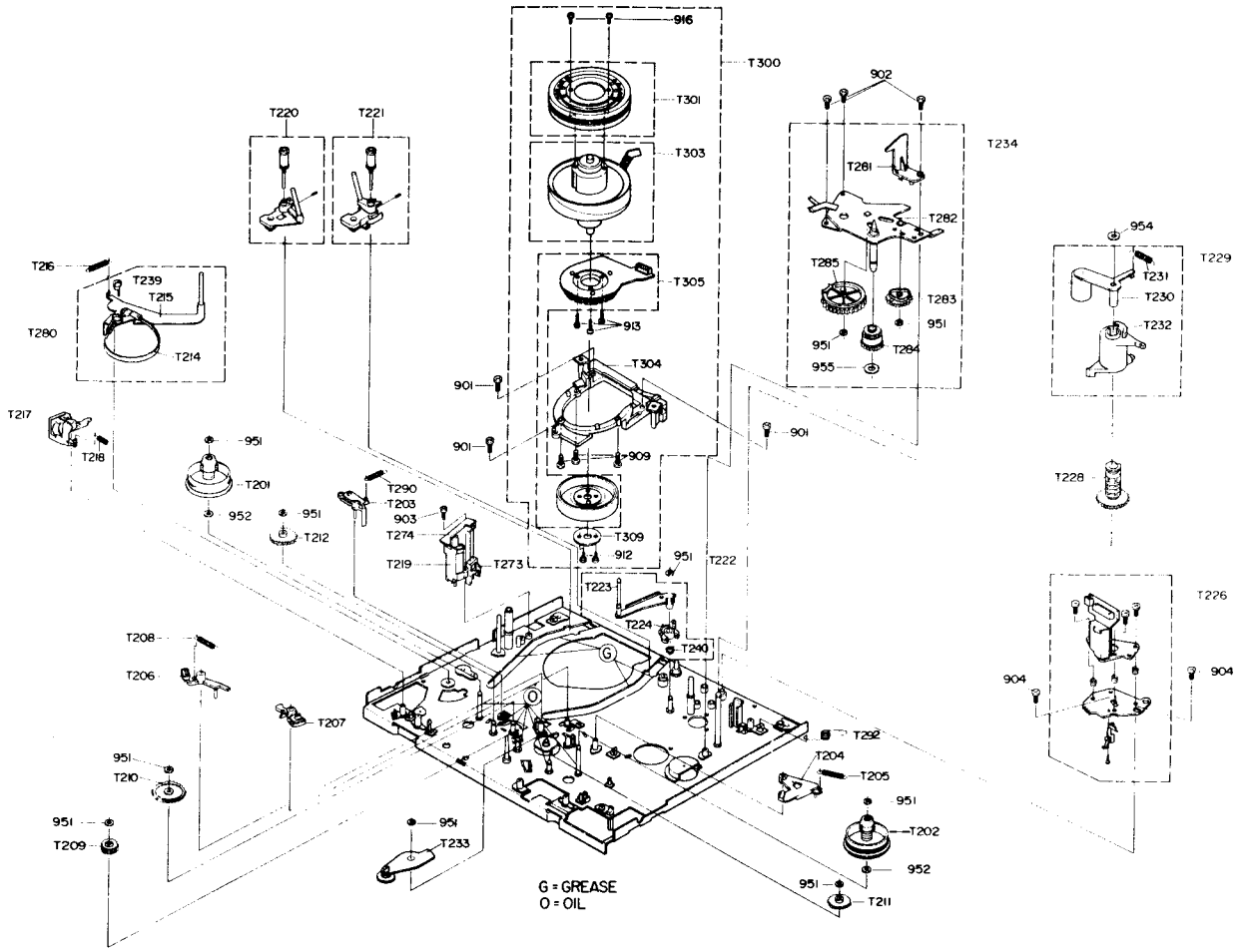
6-2. Mechanical Parts (1) ; Top View --------- 6-4

6-3. Mechanical Parts (2) ; Bottom View ------ 6-6

6-4. Housing Assembly ---------- 6-8

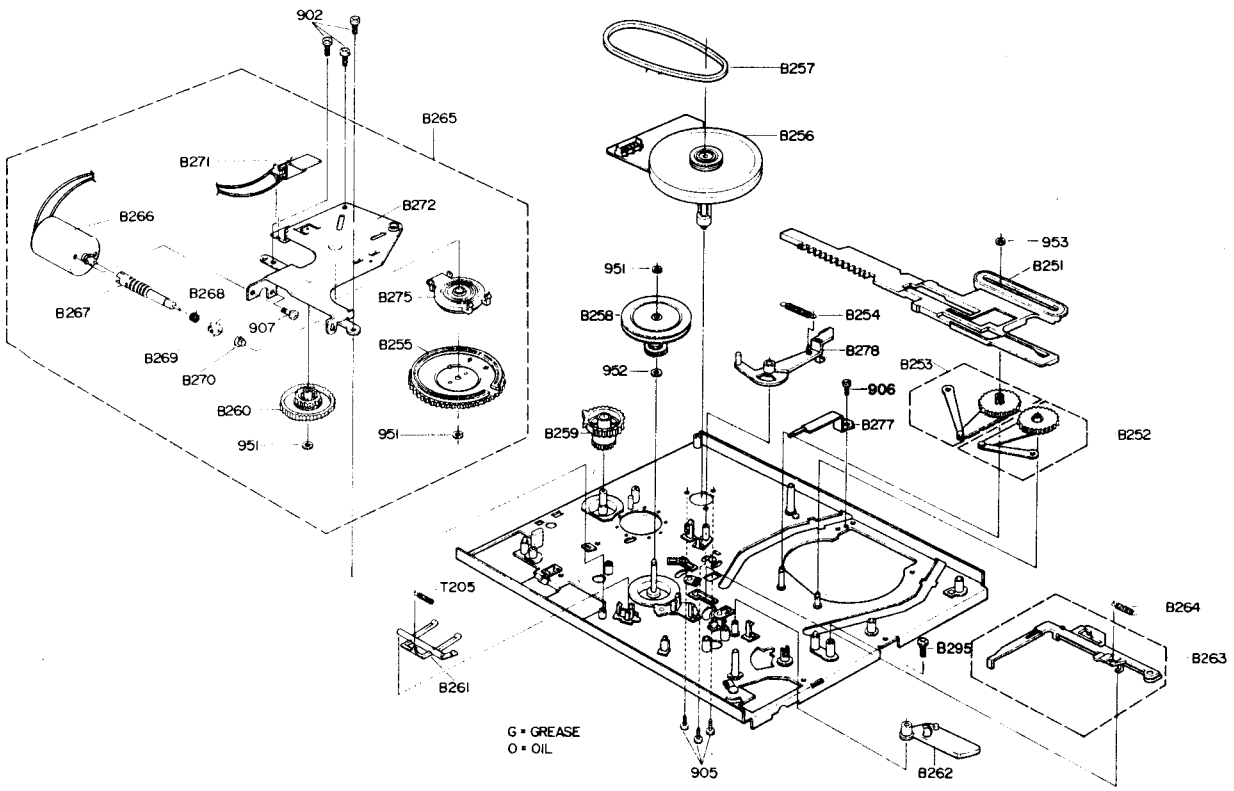


LOCA NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
1	69000-302-402	ASSY PANEL FRONT;VXK-306
2	64042-0102-01	DOOR-FRONT(L);ABS94HB T2.2 GRY
3	64042-0103-10	DOOR-FRONT(R);ABS94HB VXK-306
21	64042-0104-01	DOOR-CASSETTE;ABS94HB VXK-306
22	62724-0090-00	SPRING;SUS304 (GE/RCA)
100	V2210-0058-00	FRAME;HIPS94HB T2 BLK
101	V2002-0020-00	CABINET-TOP;PVC+FE T0.75 GRY
105	66074-601-410	LEG;VT-1260 TPE(BLK)7705
108	V6002-0041-00	CONNECTOR-BOARD;HIPS94HB VIK-306(W-2)
109	63312-0097-00	BOTTOM-COVER;SECC T0.5
153	67158-240-121	SCREW BH;2-4X12 FE FZY
155	67158-240-163	SCREW-TAP BH;2-4X16 FE FZB
156	60504-0046-00	SCREW-TAP TITE;PWH + TC M3 L6 SWRCH18A YEL ZPC3
157	60504-0040-00	SCREW-TAP TITE;BH + TB 3 L12 SWRCH18A ZPC3 YEL
200	DX3WB-R	FULL DECK ASSY;WINNER 2
600	69357-302-374	ASSY MAIN ; VXK-306/SEP/NSI/SEI/SEC/AMF
	69357-302-397	ASSY MAIN ; VXK-306/SEG
601	69312-302-236	ASSY PRE-AMP ; VXK-306(2HEAD)
	69312-302-247	ASSY PRE-AMP ; VXK-336(4HEAD)
602	69327-302-201	ASSY VPS;VPS W-2 PAL
630	63322-0174-00	HOLDER-LED;POM BLK
631	63322-0173-00	HOLDER-TR;POM BLK
632	63323-0060-00	HOLDER-PHOTO INTER;POM M90-44 H14.1 WHT(WINNER)
660	69097-123-116	REGULATOR ASSY;W-2 PAL
661	A6006-0135	POWER-CORD;VXK-306/336(SEP/NSI/SEI/SEC/AMF)
	A6006-0204	POWER-CORD;VXK-306/336/SEG
663	63054-333-130	BAN-CARD;BNCD P=1.25-K-33P 130MM
670	69371-302-284	ASSY TIMER;VXK-306/SEP/NSI/SEI/SEC/AMF
	69371-302-258	ASSY TIMER;VXK-306/SEG



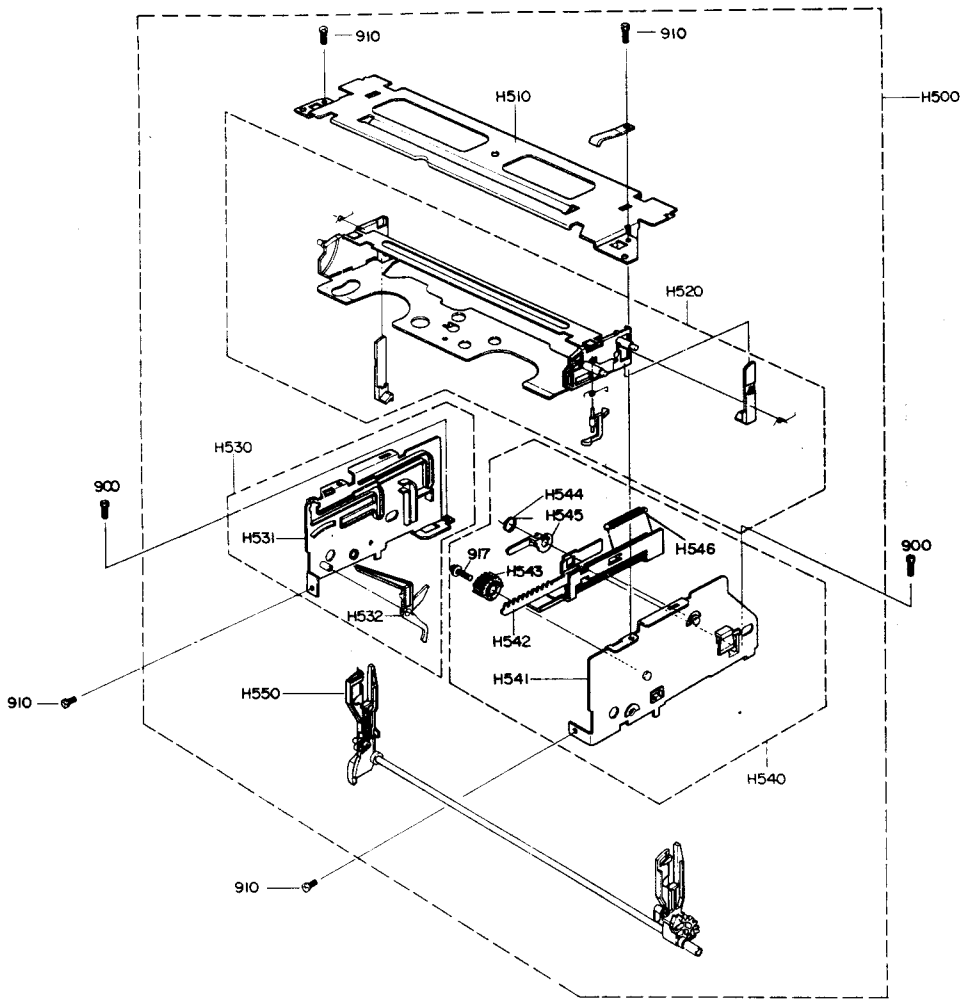
LOCA NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
901	60509-0064-00	SCREW-MACHINE;BH FP M3 L8 FE FZY WS
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE FZY
903	60504-0032-00	SCREW-PH;PH +3 2.6 L10 SUM ZN YEL
904	60509-0059-00	SCREW-MACHINE;BH FP M2.6 L6 FE FZY WSP
909	60504-0081-00	SCREW-MACHINE;BH +FP 2.6 L9 SWRCH10A
912	67094-604-710	SCREW-DAMPER;M2.0X7.0 SWCM 10(MFZN2-C)
913	67008-123-101	SCREW-PH;+M2.3X10 FE FZY
916	67004-126-086	SCREW-BH;+M2.6X8 WSZN/70391398
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
954	60534-0024-00	WASHER-SLIT;ID3 OD8 T0.5 POLYSLIDE
955	60534-0019-00	WASHER-SLIT;A ID5 OD9 T0.5 POLYSLIDE
T201	61574-0010-01	REEL DISK(L) ASSY;X3RL03032A
T202	61574-0012-01	REEL DISK(R) ASSY;X3RL03031A
T203	66603-620-110	BRAKE SUB L;PBT#3300 NAT
T204	62614-0004-01	BRAKE SUB(R) ASSY;X3RL02021A
T205	66674-652-610	S/P BRAKE SUB
T206	62614-0003-01	BRAKE MAIN(L) ASSY;X3RL02022A
T207	62614-0002-01	BRAKE MAIN(R) ASSY;X3RL02021A
T208	66674-652-510	S/P BRAKE MAIN;SUS304 WPB
T209	61474-0061-01	GEAR RELAY S1;PEBAX #6333
T210	61474-0062-01	GEAR RELAY S2;POM(M90-44) NAT
T211	61474-0060-01	GEAR RELAY T;PEBAX #6333
T212	61474-0063-01	GEAR RELAY S3;PEBAX #6333
T214	62024-0005-01	BAND TENSION ASSY;X3RL04051A
T215	69000-290-579	ARM TENSION ASSY;SECC+SUS
T216	66674-652-910	SPRING TENSION;SUS304
T217	61533-0064-00	LEVER-REC S/W;POM M90-44 H12.1 NAT
T218	62724-0075-00	SPRING-RECORD S/W;ES SUS304
T219	64079-700-454	HEAD MAGNETIC F/E;VTR-1X2ERS11-089
T220	69000-291-035	ASSY-P.B & G.R(L);X-3
T221	69000-291-036	ASSY-P.B & G.R(R);X-3
T222	69000-291-004	FULL REVIEW ARM ASSY;X-3
T223	61544-0032-00	ARM-REVIEW ASSY;SECC+SUS303C+C3604BD
T224	61473-0059-01	GEAR REVIEW;POM(M90-44) NAT
T226	69000-291-032	A/C HEAD ASSY;X-3(WINNER)
T228	61472-0054-01	GEAR ESCALATOR;POM(M90-44)
T229	61523-0021-01	PINCH ROLLER UNIT;X-3A
T230	61543-0040-01	ARM PINCH ASSY;SECC 1.6+SUS+C3604BD

LOCA NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
T231	62724-0062-01	S/P PINCH ROLLER;SUS304-WPB
T232	63323-0043-01	HOLDER ESCALATOR;PC 30%
T233	61604-0003-01	IDLER SUB ASSY;X3RL 06061A
T234	67179-0069-03	UNIT-DRIVE PINCH;X-3
T239	66654-617-810	CAM TENSION;POM(M90-44) WHT
T240	62724-0117-00	SPRING-REVIEW;CS STS304/WPB PI0.45 D5 L5.5
T273	B6010-0248	CONNECTOR-WAFER;TMC-E02P-D1 BLK
T274	66029-0296-00	P.C.B-F/E HEAD;1V0 T1.6 W29 L180 VT-350R
T280	69000-290-560	ASSY FULL ARM TENSION;SECC+SUS+POM+FELT
T281	63073-0015-00	SUPPORTER-LID OPENNER;POM(M90-44) T2 X-3
T282	63012-0098-00	BRACKET-PINCH DRIVE;SECC T1.0
T283	61473-0058-01	GEAR CAM PINCH;POM(OL-10)
T284	61473-0056-01	GEAR RELAY PINCH;PBT #2002
T285	61473-0057-01	GEAR CAM DRIVE;POM(OL-10)
T290	62724-0101-00	SPRING-BRAK SUB L;SUS304 PI0.3 D3 L20
T292	62724-0082-01	SPRING-ESCALATOR;PS SUS304-WPB PI1 D5 L30
T300	V9020-124-009	CYLINDER ASSY (2HEAD)
	V9020-124-018	CYLINDER ASSY (4HEAD)
T301	V9000-400-020	UPPER CYLINDER ASSY;CV2-S2P(SP) (2HEAD)
	V9000-400-040	UPPER CYLINDER ASSY;CX3-D4P (4HEAD)
T303	69000-291-083	LOWER CYLINDER ASSY;CX4-S2P (2HEAD)
	69000-291-084	LOWER CYLINDER ASSY;CX4-D4P (4HEAD)
T304	62201-0051-00	BASE-CYLINDER;ADC12 WHT X-3W
T305	66823-0043-00	MOTOR-CYLINDER;DMVDMT04C
T309	66124-601-710	RETAINER-RUBBER ASSY;SECC+SILICONE



LOCA NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
902	60509-0063-00	SCREW-TAPPING;BH B M3 L8 FE FZY
905	60504-0044-00	SCREW-TAPPING;BH + 3 M2.6 L7.5 SWRCH18A ZPC3 YEL
906	60509-0058-00	SCREW-MACHINE;BH FP M3 L4 SWRCH10A YEL ROBOT
907	67004-100-710	SCREW-PH;+3X4 FEFZY
951	67334-600-310	WASHER SLIT;PI2.5XPI5XT0.5
952	67304-103-410	WASHER-PLAIN;3.2X6X0.5 POLYSLIDER
953	67334-601-830	SLIT WASHER;2.5X9X0.5(RED)
B251	66602-603-510	SLIDE MAIN;PBT 6300T(NAT)
B252	61473-0047-01	GEAR LOADING
B253	61473-0045-01	GEAR LODAING
B254	66674-652-810	S/P BRAKE CAPSTAN;SUS304 WPB
B255	61472-0055-02	GEAR MASTER;POM(M90-44)
B256	66829-0024-05	MOTOR-D/D CAPSTAN;F2QKB59 12V FGZ
B257	65274-603-910	BELT CAPSTAN;CY-65
B258	61453-0001-01	CLUTCH ASSY;X3RL10101A
B259	61473-0051-02	GEAR-E/J DRIVE;KOPER(KN333G30) BLK
B260	61473-0053-02	GEAR-WORM WHEEL;NYLON12
B261	66603-619-510	LEVER SHIFT;POM(M90-44)
B262	61534-0040-01	LEVER TENSION CONTROL;POM(M90-44) NAT
B263	61643-0016-01	SLIDE I.B ASSY;X3RL02021A
B264	62724-0129-00	SPRING-RELEASE BRAKE;SUS304 WPB
B265	67179-0068-03	UNIT-L/D;X-3W
B266	66824-0013-01	L/D MOTOR ASSY;RF370C+POM
B267	69000-291-056	WORM LOADING ASSY;POM+SUS
B268	62724-0061-01	S/P CLUTCH;SUS304-WPB
B269	61504-0006-01	PULLEY RELEASE;POM(M90-44)
B270	63324-0042-01	HOLDER-SHAFT;POM(M90-44)
B271	69000-291-054	CON WAFER ASSY;WAFER+FPC+LEAD WIRE
B272	63011-0097-00	BRACKET-LOADING;SECC E20/20(T1.2)
B275	66203-0007-02	SWITCH-PROGRAM;SMRS30A(K-ALPS)
B277	63374-0002-00	BRUSH-HEAD ASSY;SECC+CARBON
B278	62614-0005-01	BRAKE DD CAP ASSY;X3RL02021A
B295	60504-0070-00	SCREW-TAP TITE;PWH + B M3 L8 SWCH1018 YEL
T205	66674-652-610	S/P BRAKE SUB

6-4. Housing Assembly

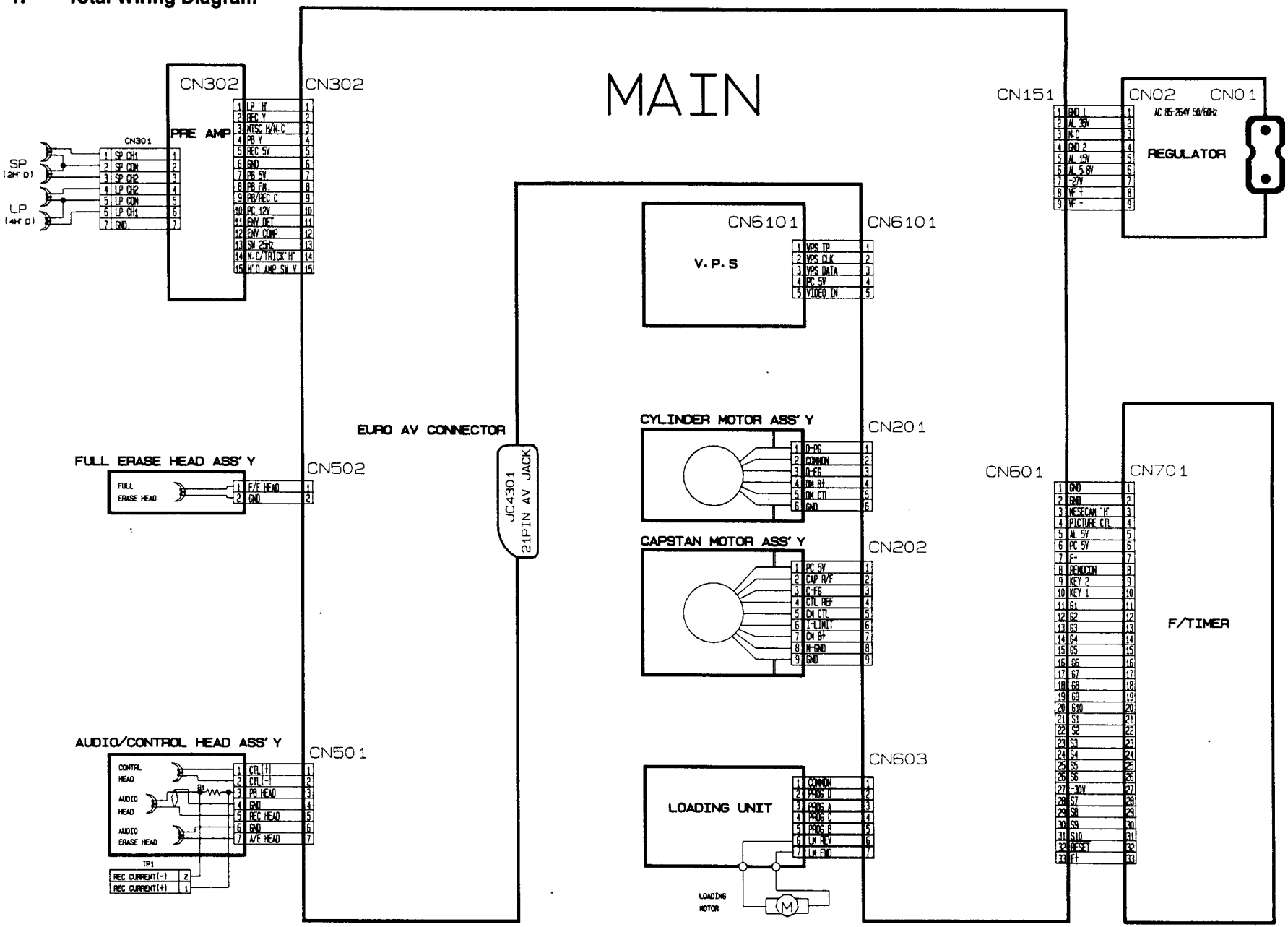


LOCA NO	PART-NUMBER	DESCRIPTION;SPECIFICATION
900	60509-0061-00	SCREW-MACHINE;BH FP M3 L6 FE FZY
910	60509-0062-00	SCREW-TAP TITE;BH + TS M3 L6 FE FZY
917	67154-101-420	SCREW-TAP PWH;2S-3X8 FE FZY
H500	62052-0004-02	HOUSING-F/L ASSY;X3FL2931OC
H510	62202-0029-00	CHASSIS-UPPER;SECC E20/20 T1.2
H520	63322-0044-00	HOLDER-CASS ASSY;X3FL11120A
H530	62203-0027-00	CHASSIS-SIDE
H531	62203-0028-00	CHASSIS-SIDE
H532	61533-0043-00	LEVER-DOOR;LUCEL-N109-LD/KEPITAL F20-03
H540	62203-0025-01	CHASSIS-SIDE
H541	62203-0026-01	CHASSIS-SIDE
H542	61474-0080-01	GEAR-RACK ASS'Y;SECC E20/20 T1.6 SWPB
H543	61473-0064-01	GEAR-JOINT;LUCEL MR-320/KT-20
H544	62724-0067-01	SPRING-LEVER DAMPER;TS STS304 WPB PI0.85 L12
H545	61533-0042-01	LEVER-DAMPER;LUCEL N109-LD/KEPITAL F20-03 BLK
H546	62724-0112-00	SPRING-RACK GEAR;ES SWPB PI0.5 D3.5
H550	61043-0025-00	SHAFT ARM ASSY;X3FL05050A

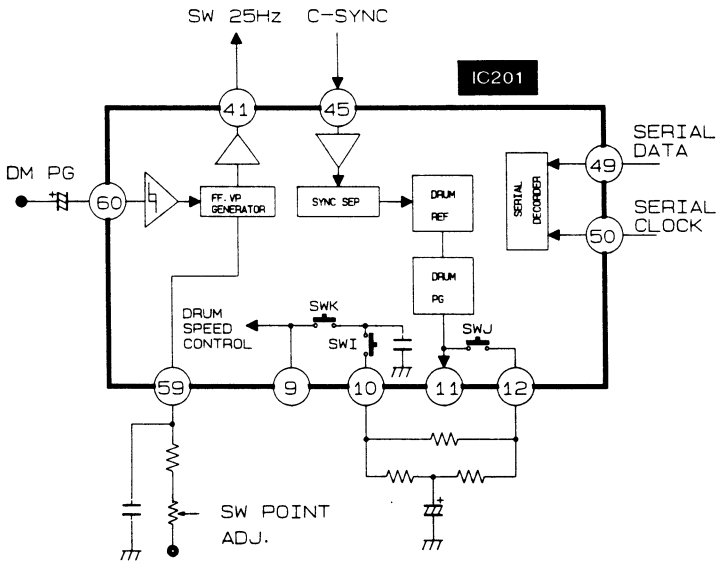
7. BLOCK DIAGRAMS

		Page
7-1.	Total Wiring Diagram	7-2
7-2.	Cylinder Phase Control	7-3
7-3.	Cylinder Speed Control	7-3
7-4.	Capstan Phase Control	7-4
7-5.	Capstan Speed Control	7-4
7-6.	Audio Playback Process	7-5
7-7.	Audio Record Process	7-5
7-8.	Luminance Playback Process (VXK-306/307)	7-6
7-9.	Luminance Playback Process (VXK-336/337)	7-7
7-10.	Luminance Record Process (VXK-306/307)	7-8
7-11.	Luminance Record Process (VXK-336/337)	7-9
7-12.	Chrominance Playback Process (VXK-306/307)	7-10
7-13.	Chrominance Playback Process (VXK-336/337)	7-11
7-14.	Chrominance Record Process (VXK-306/307)	7-12
7-15.	Chrominance Record Process (VXK-336/337)	7-13

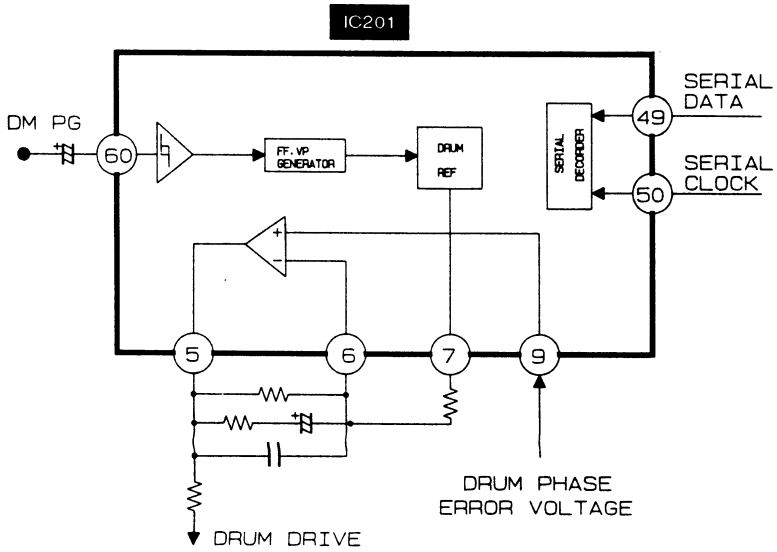
7-1. Total Wiring Diagram



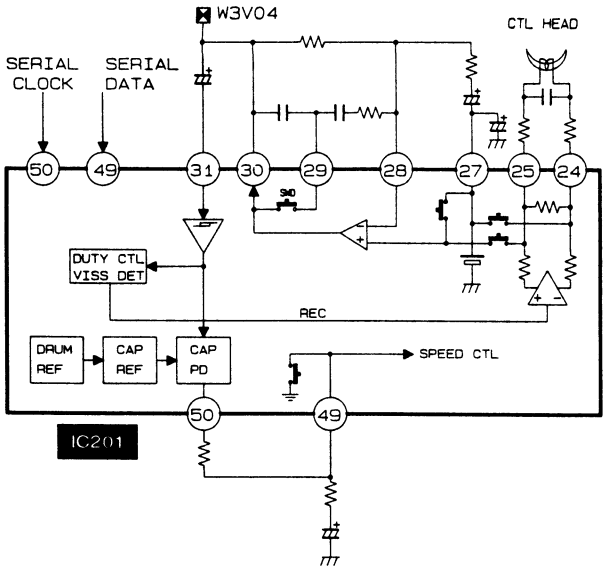
7-2. Cylinder Phase Control



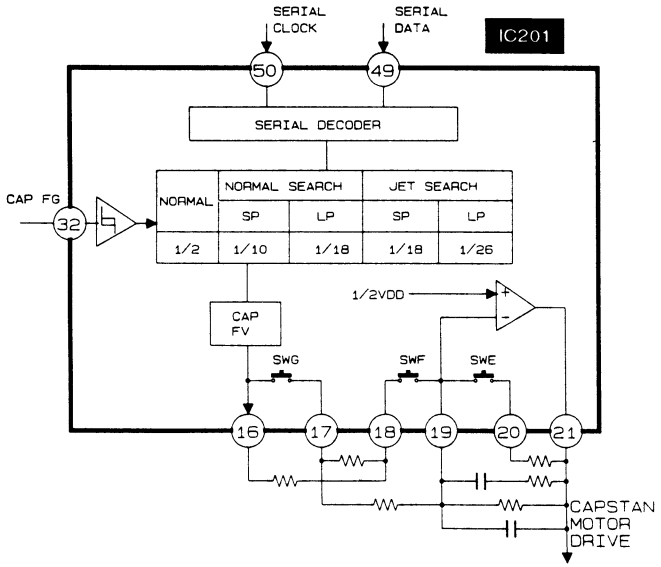
7-3. Cylinder Speed Control



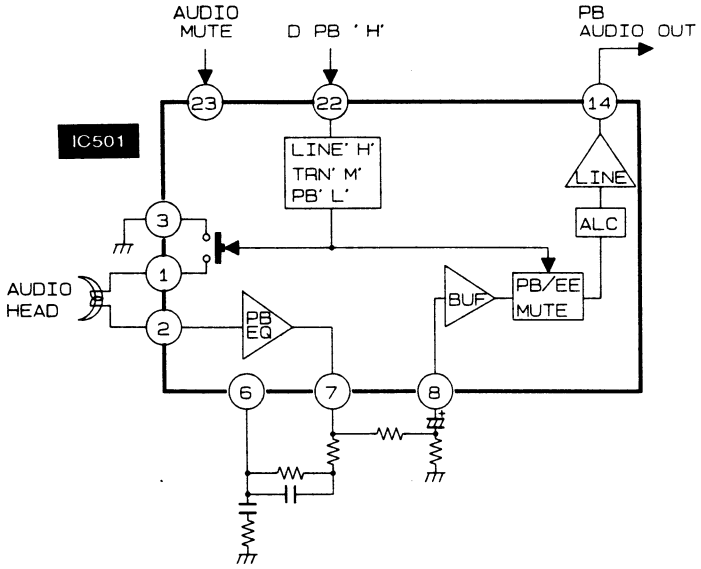
7-4. Capstan Phase Control



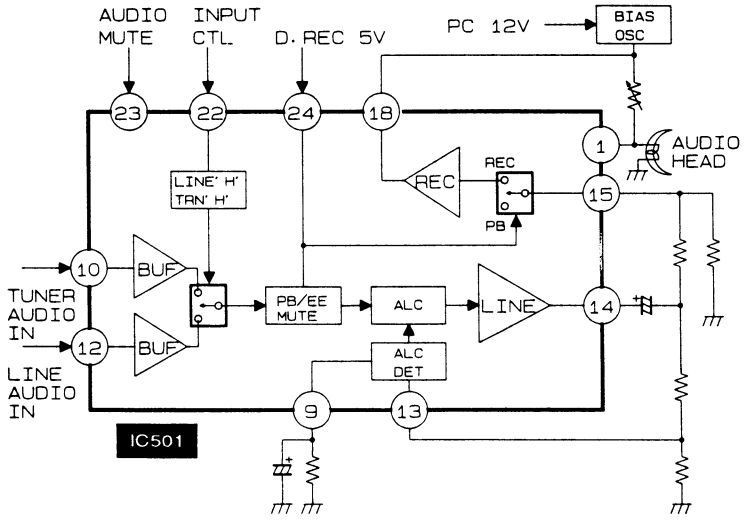
7-5. Capstan Speed Control



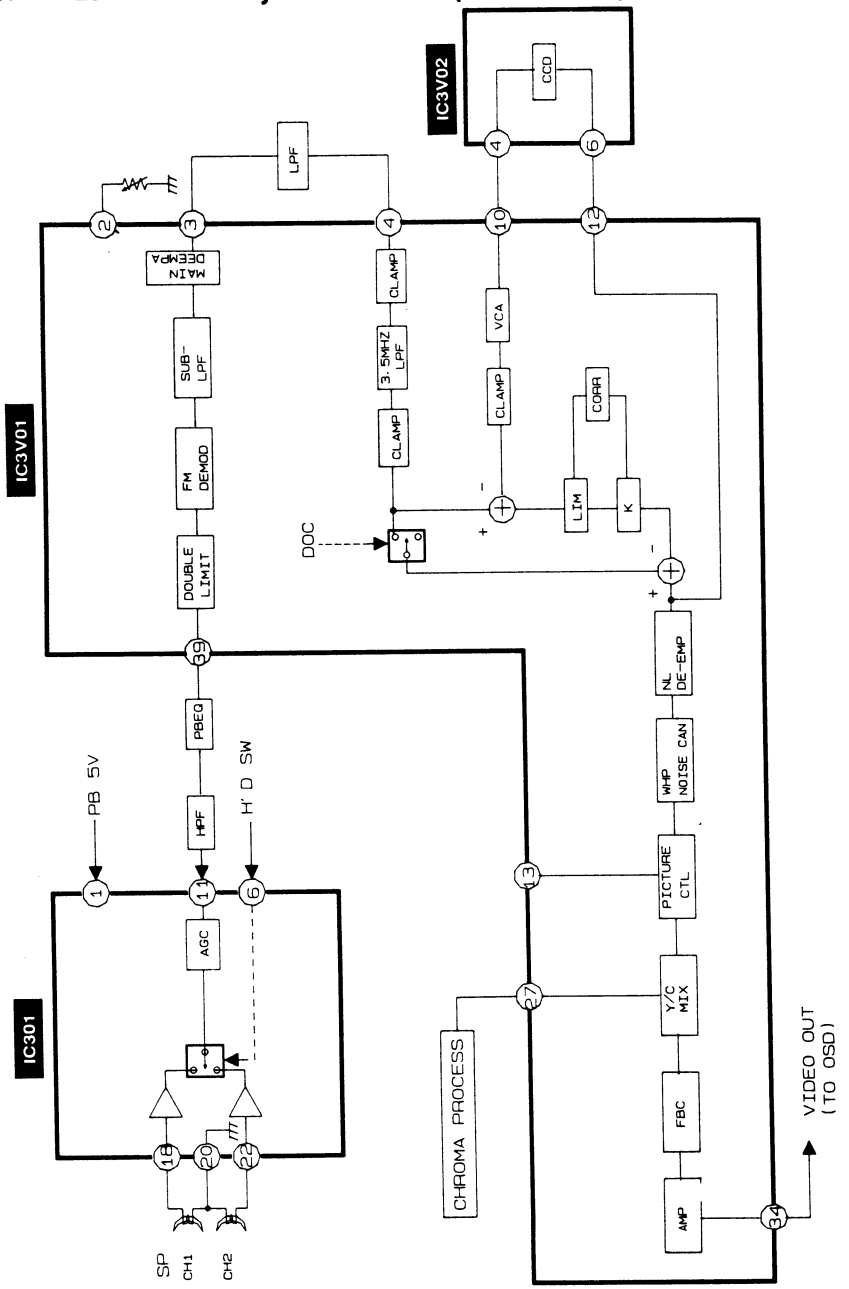
7-6. Audio Playback Process



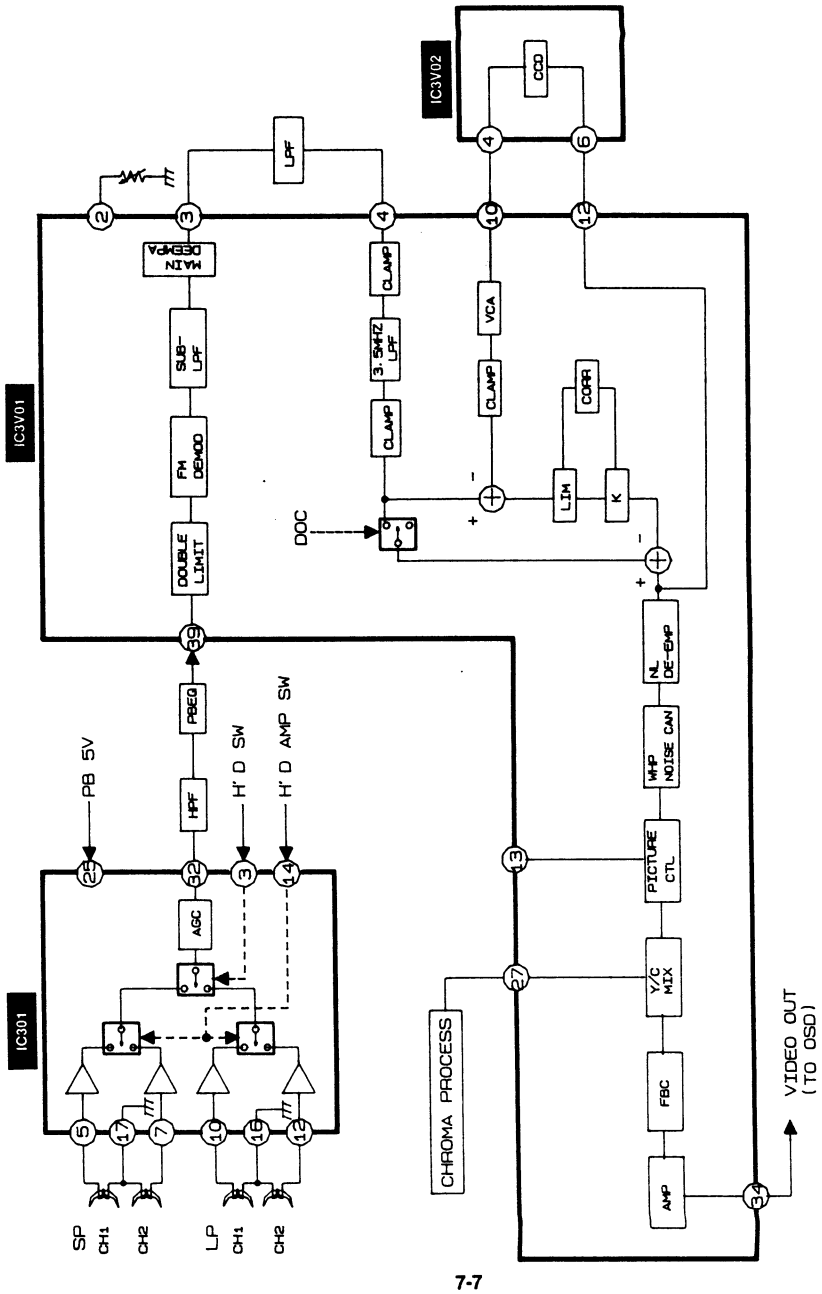
7-7. Audio Record Process



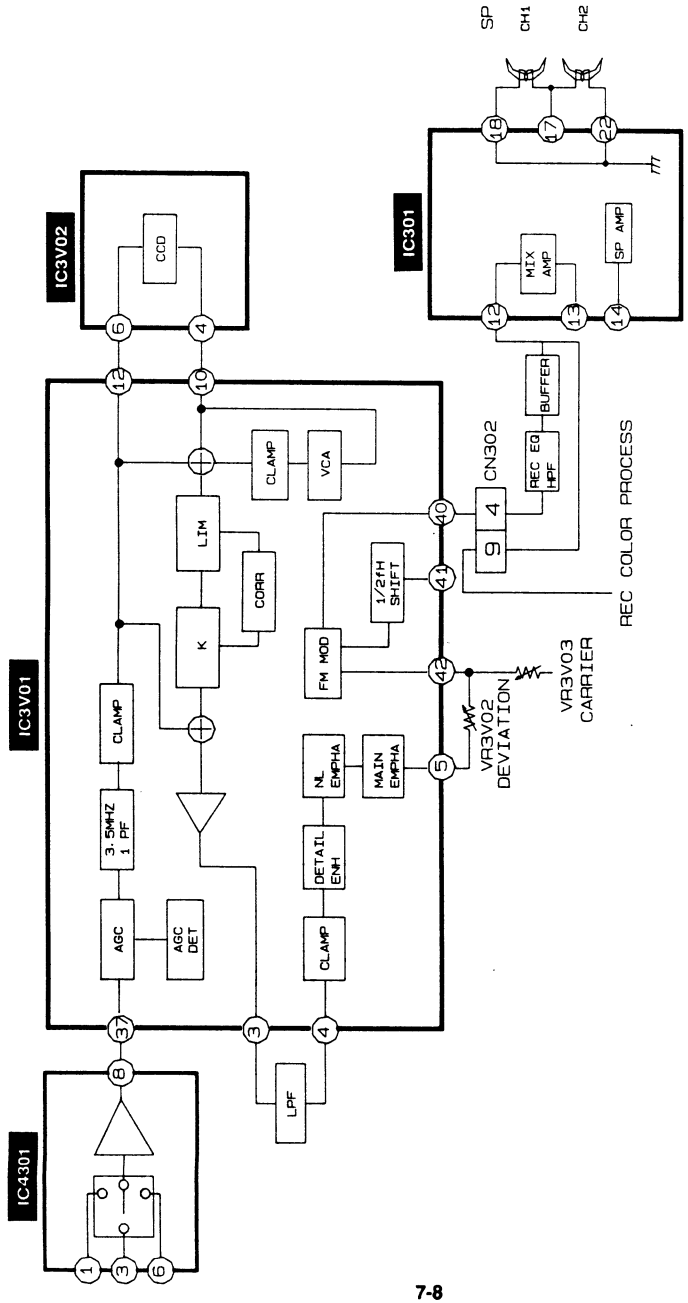
7-8. Luminance Playback Process (VXK-306/307)



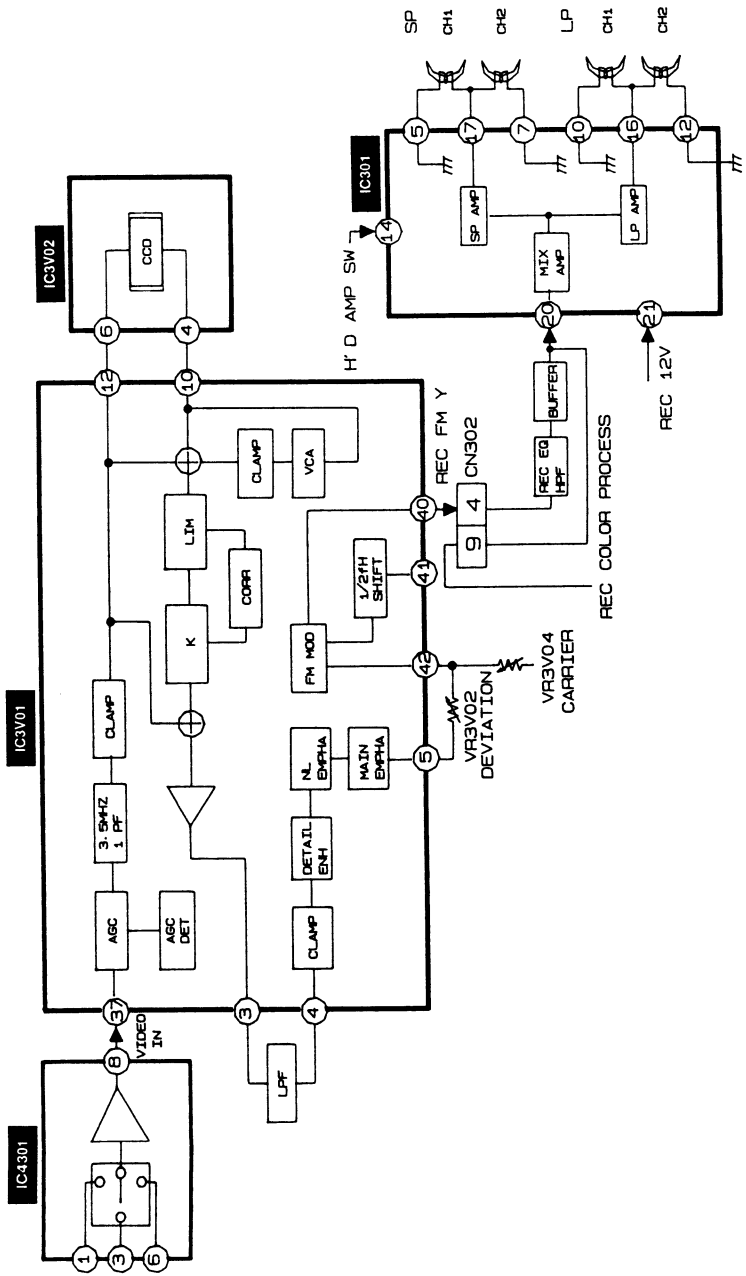
7-9. Luminance Playback Process (VXK-336/337)



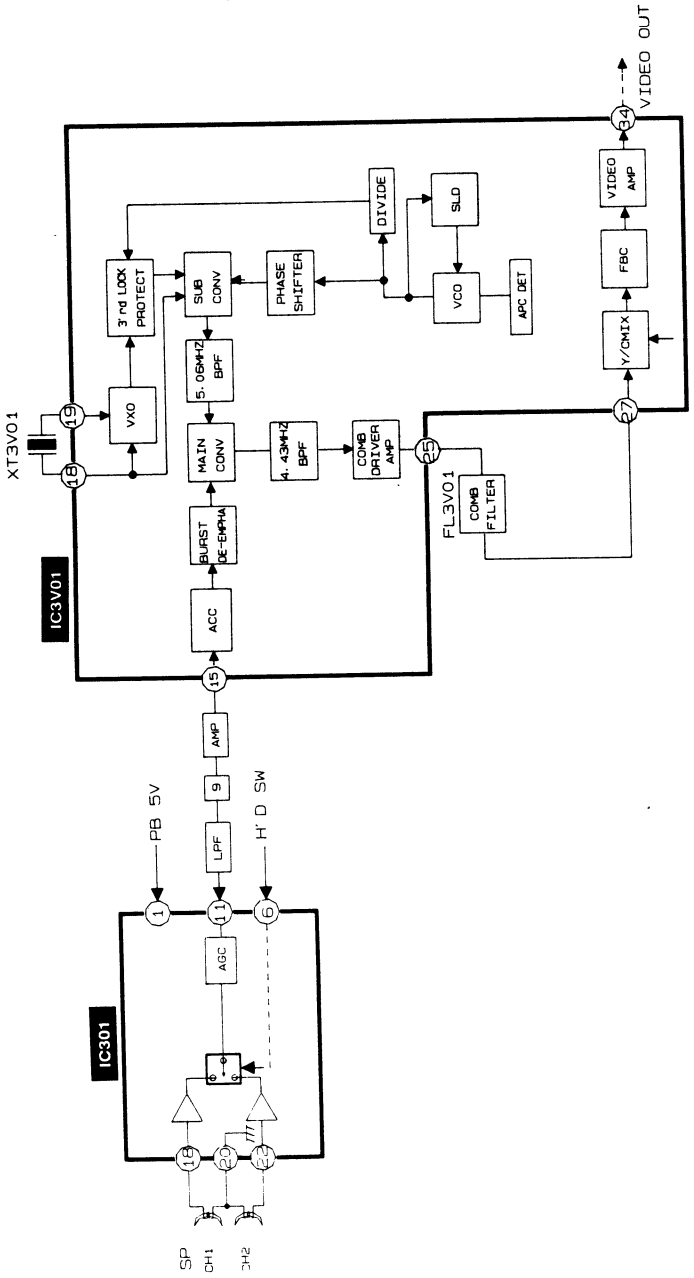
7-10. Luminance Record Process (VXK-306/307)



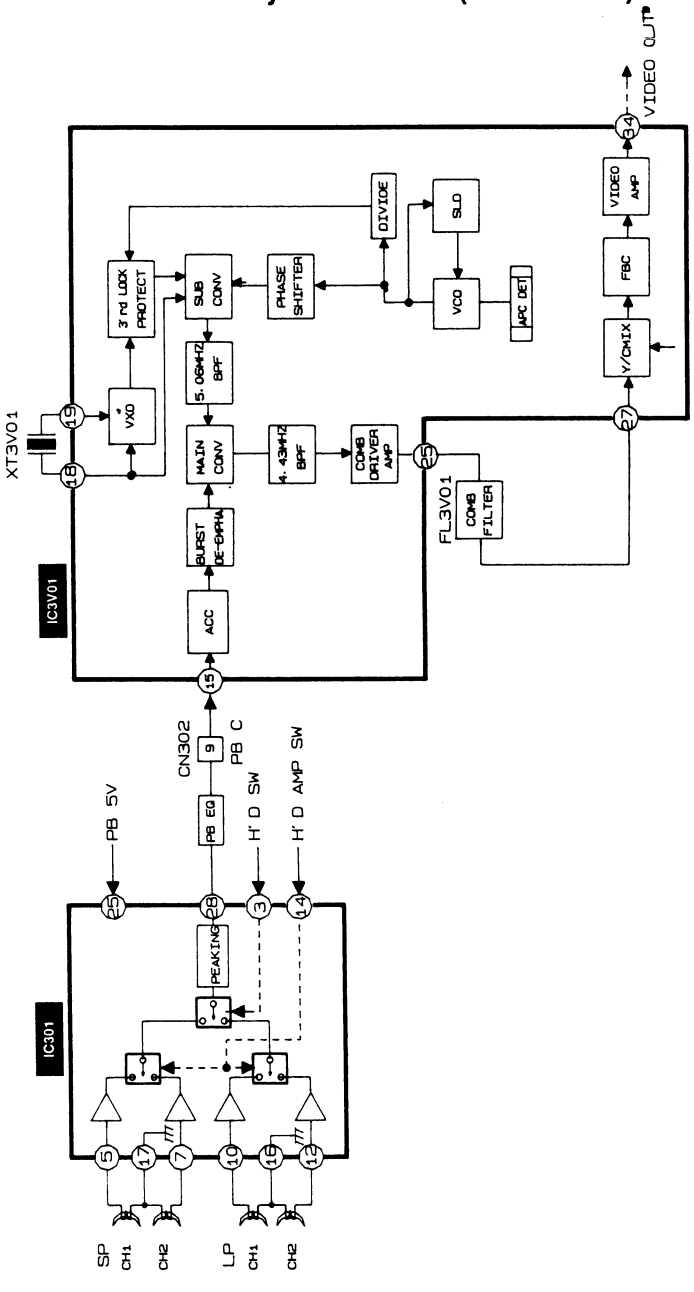
7-11. Luminance Record Process (VXK-336/337)



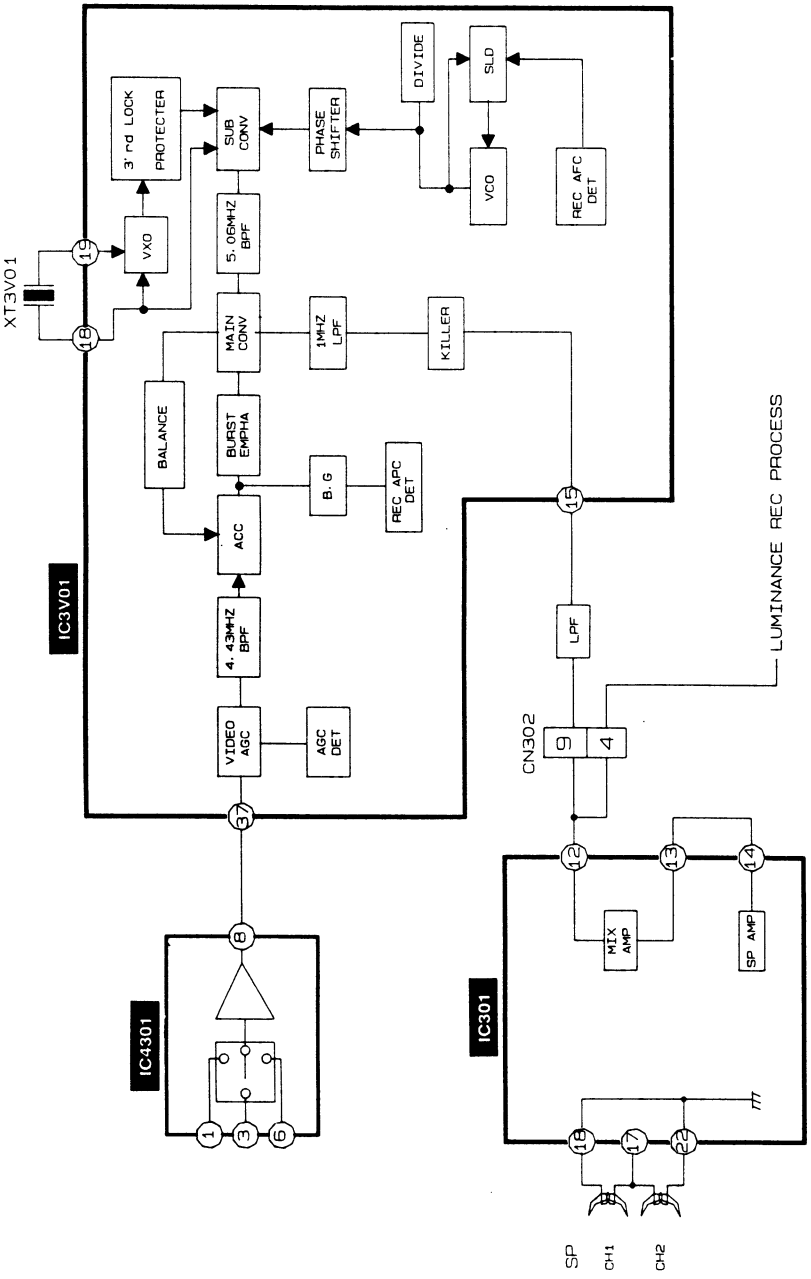
7-12. Chrominance Playback Process (VXK-306/307)



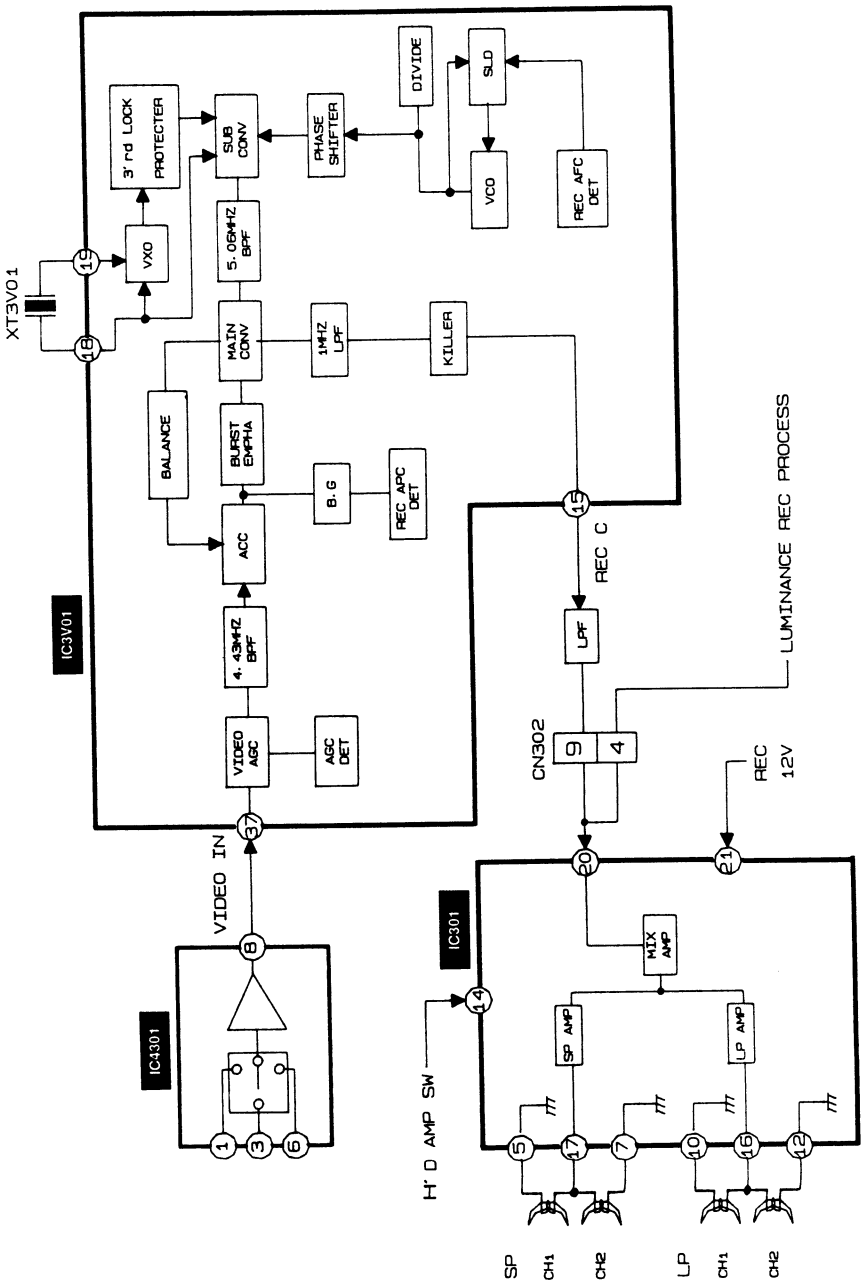
7-13. Chrominance Playback Process (VXK-336/337)



7-14. Chrominance Record Process (VXK-306/307)



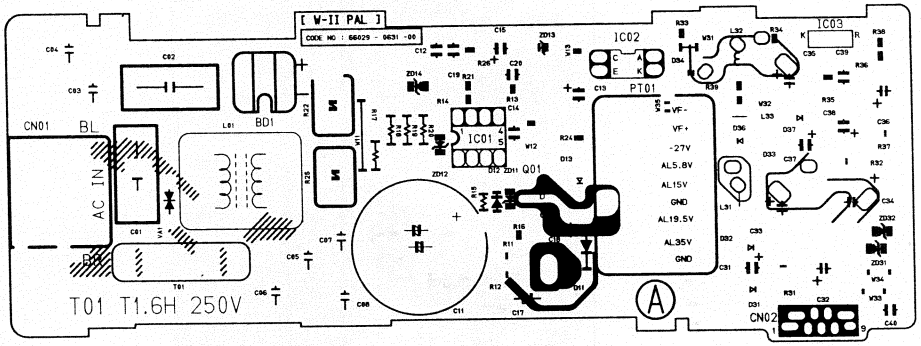
7-15. Chrominance Record Process (VXK-336/337)



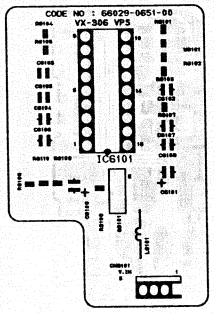
8. CIRCUIT BOARDS

		Page
8-1.	Regulator	8-2
8-2.	V.P.S (OPTION)	8-2
8-3.	Pre-Amp (VXK-306/307)	8-3
8-4.	Pre-Amp (VXK-336/337)	8-3
8-5.	Main	8-4
8-6.	Function/Timer (VXK-306/336)	8-5
8-7.	Function/Timer (VXK-307/337)	8-5

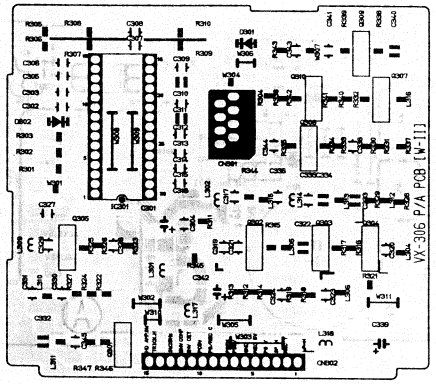
8-1. Regulator



8-2. V.P.S (OPTION)

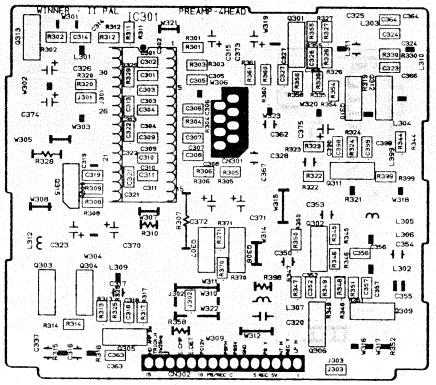


8-3. Pre-Amp (VXK-306/307)



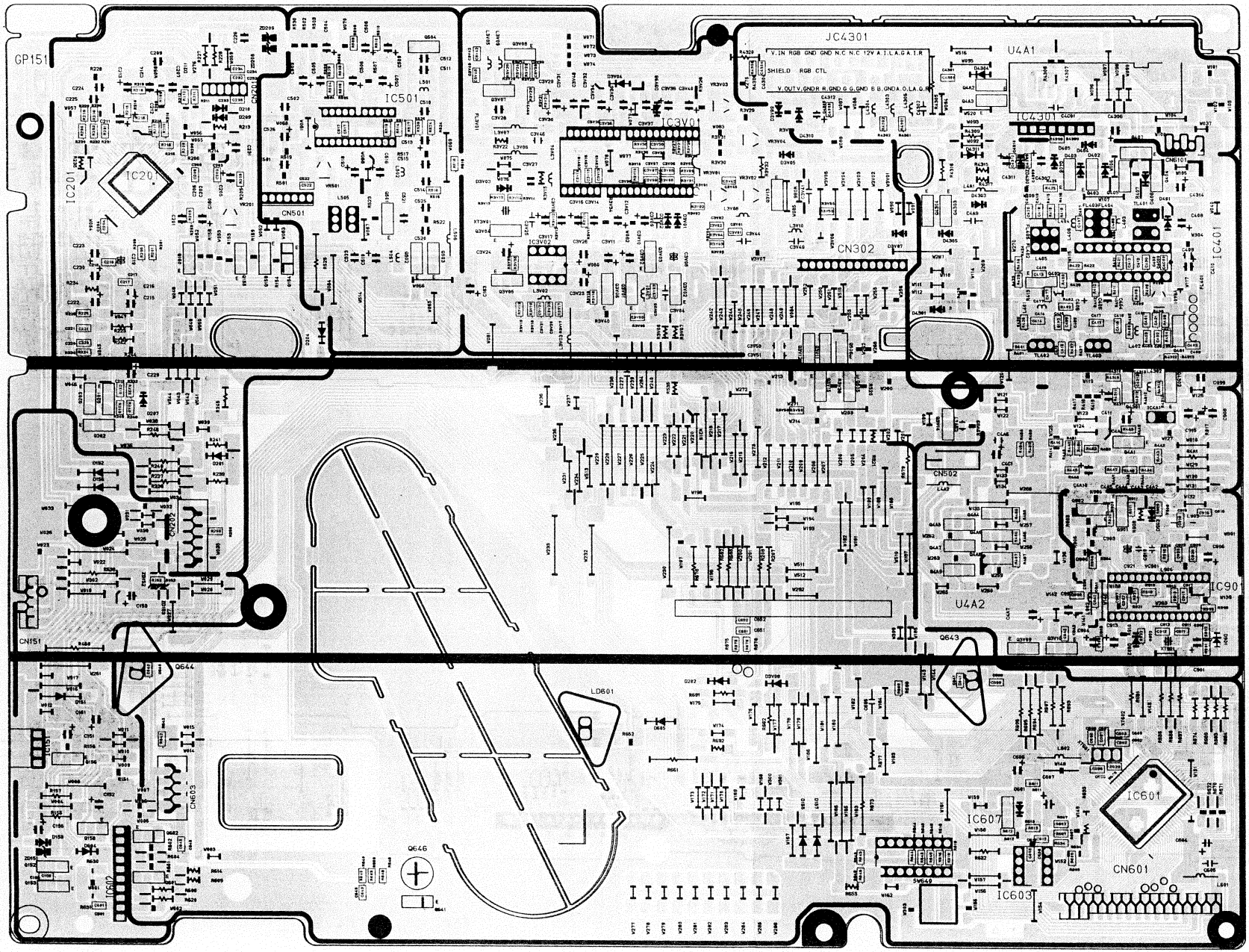
8-4. Pre-Amp (VXK-336/337)

: CHIP Parts

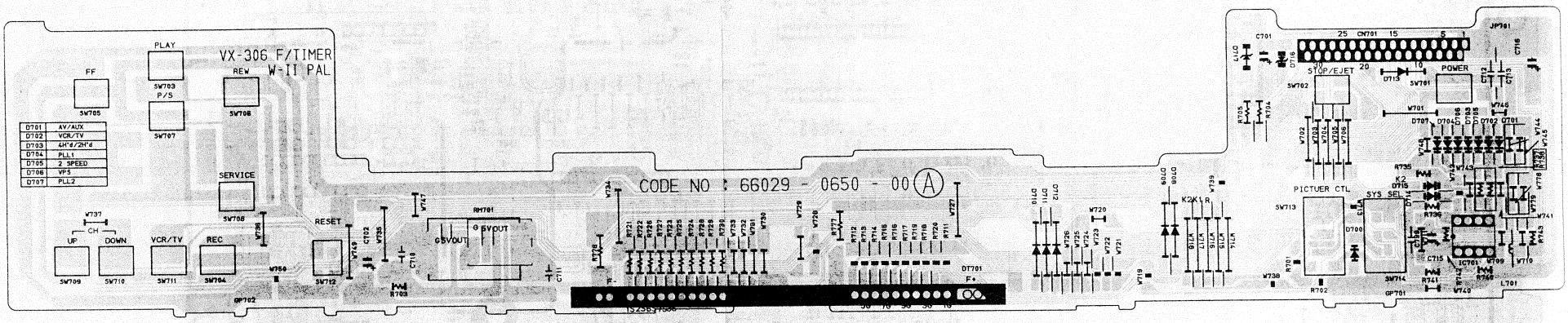


3-5. Main

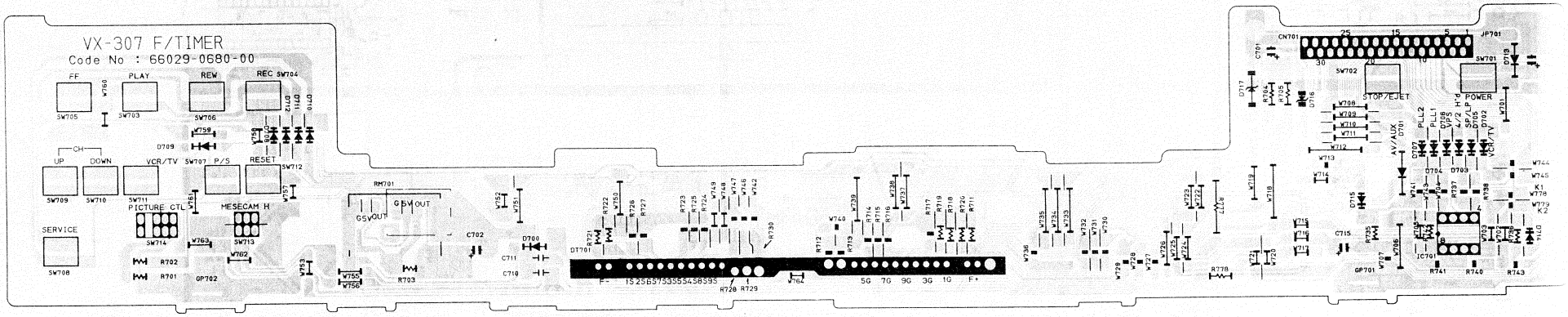
: CHIP Parts



8-6. Function/Timer (VXK-306/336)



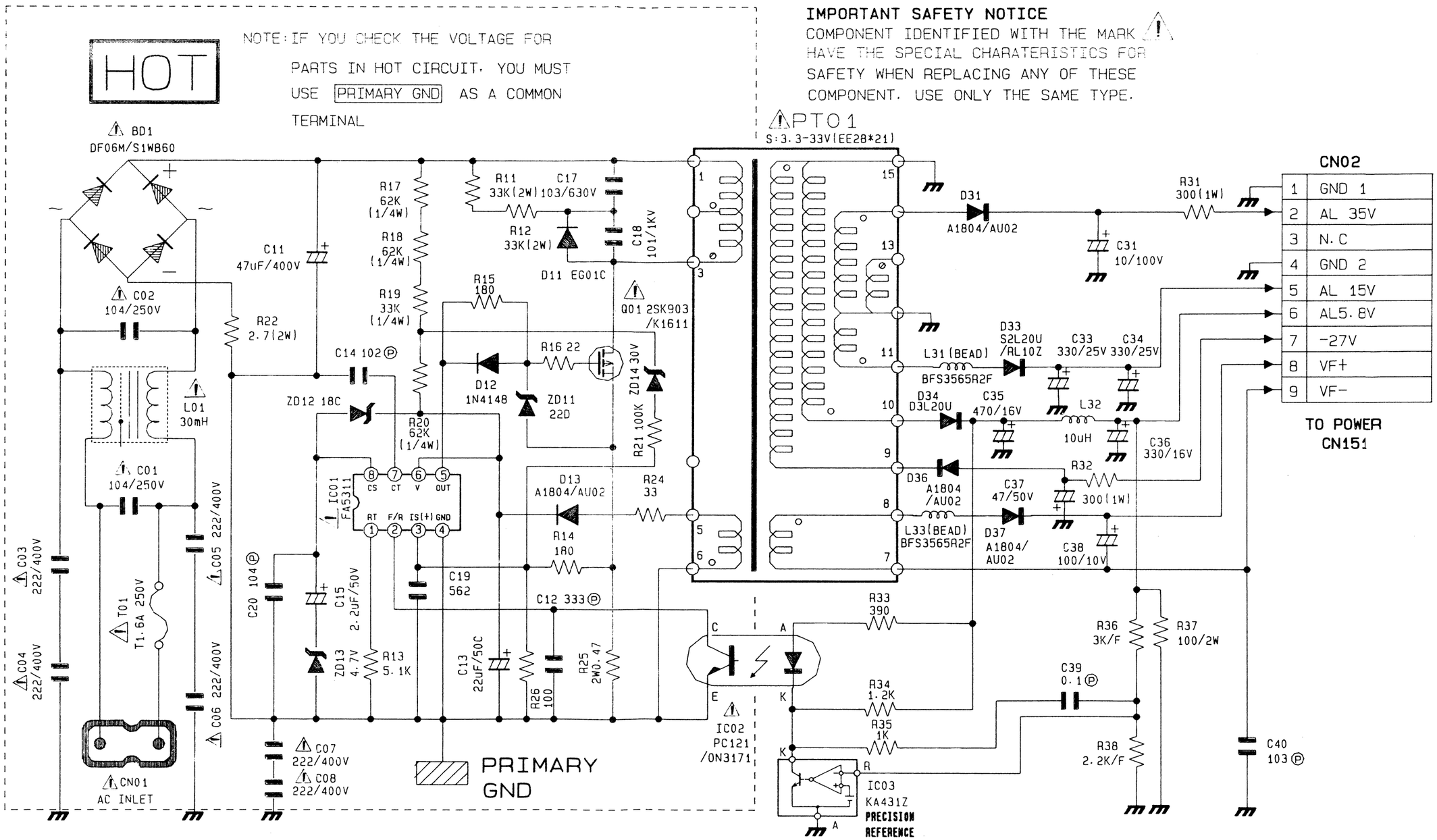
8-7. Function/Timer (VXK-307/337)



9. SCHEMATIC DIAGRAMS

		Page
9-1.	Regulator	9-2
9-2.	Power	9-3
9-3.	System Control	9-4
9-4.	Servo	9-6
9-5.	Luminance/Chrominance	9-8
9-6.	Pre-Amp (VXK-306/307)	9-10
9-7.	Pre-Amp (VXK-336/337)	9-12
9-8.	Audio	9-14
9-9.	Tuner	9-16
9-10.	V.P.S (OPTION)	9-17
9-11.	O.S.D	9-18
9-12.	Function/Timer	9-20
9-13.	Remote Control	9-21

9-1. Regulator



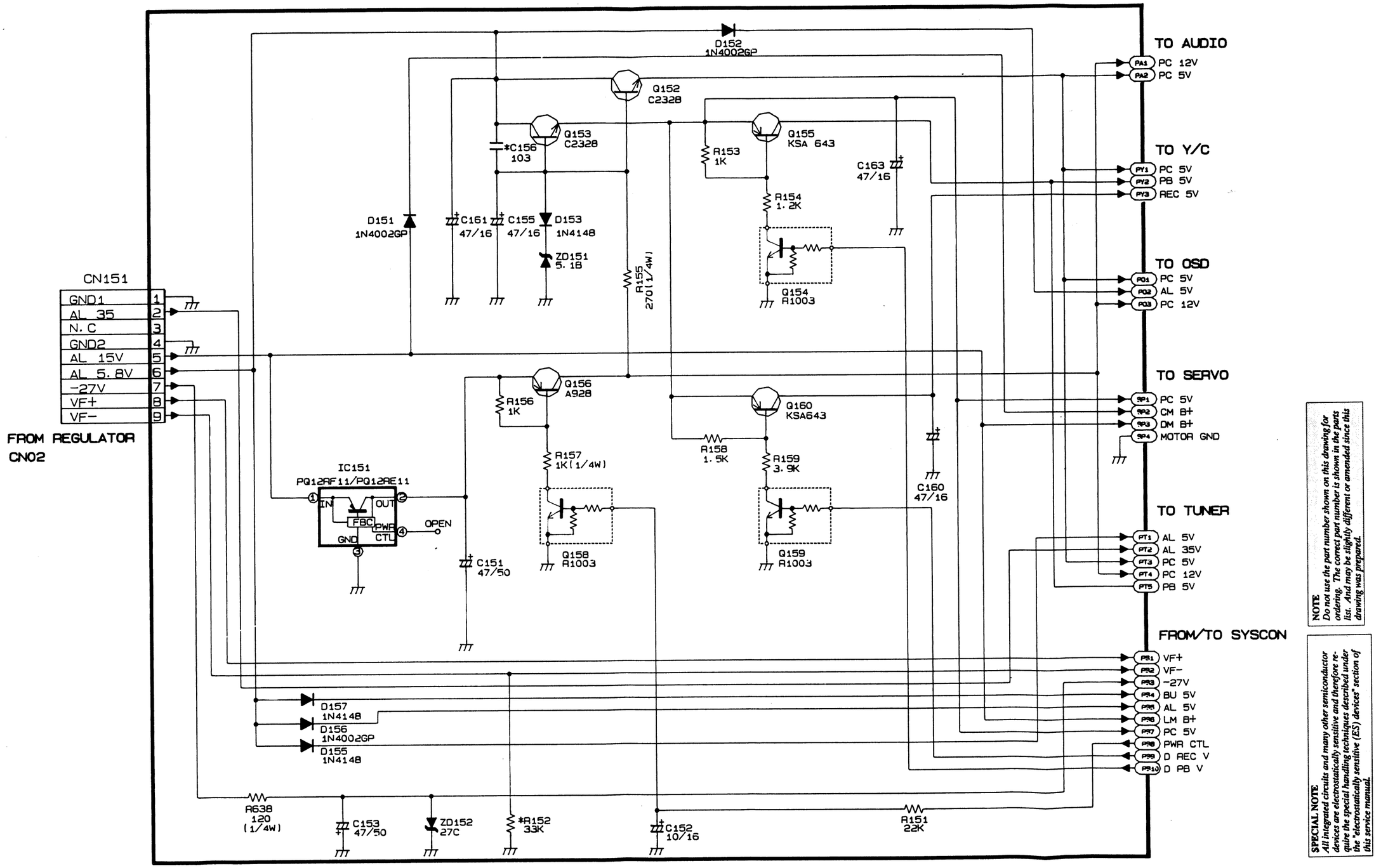
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

IMPORTANT SAFETY NOTICES
Components identified with the mark ⚠ have he special charateristics for safety when replacing any of these components. Use only the same type.

POWER

9-2. Power

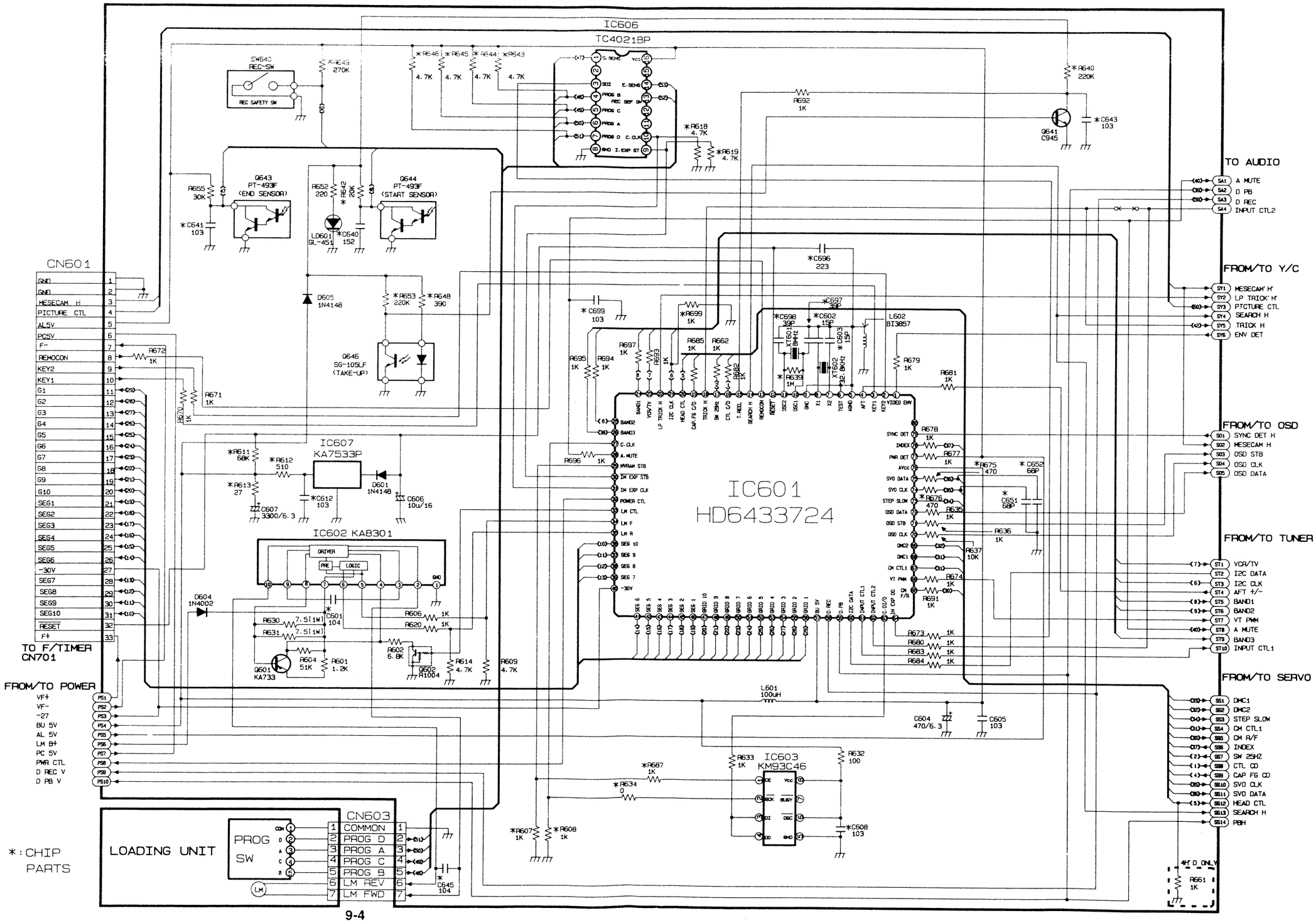


NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

SYSTEM CONTROL

9-3. System Control



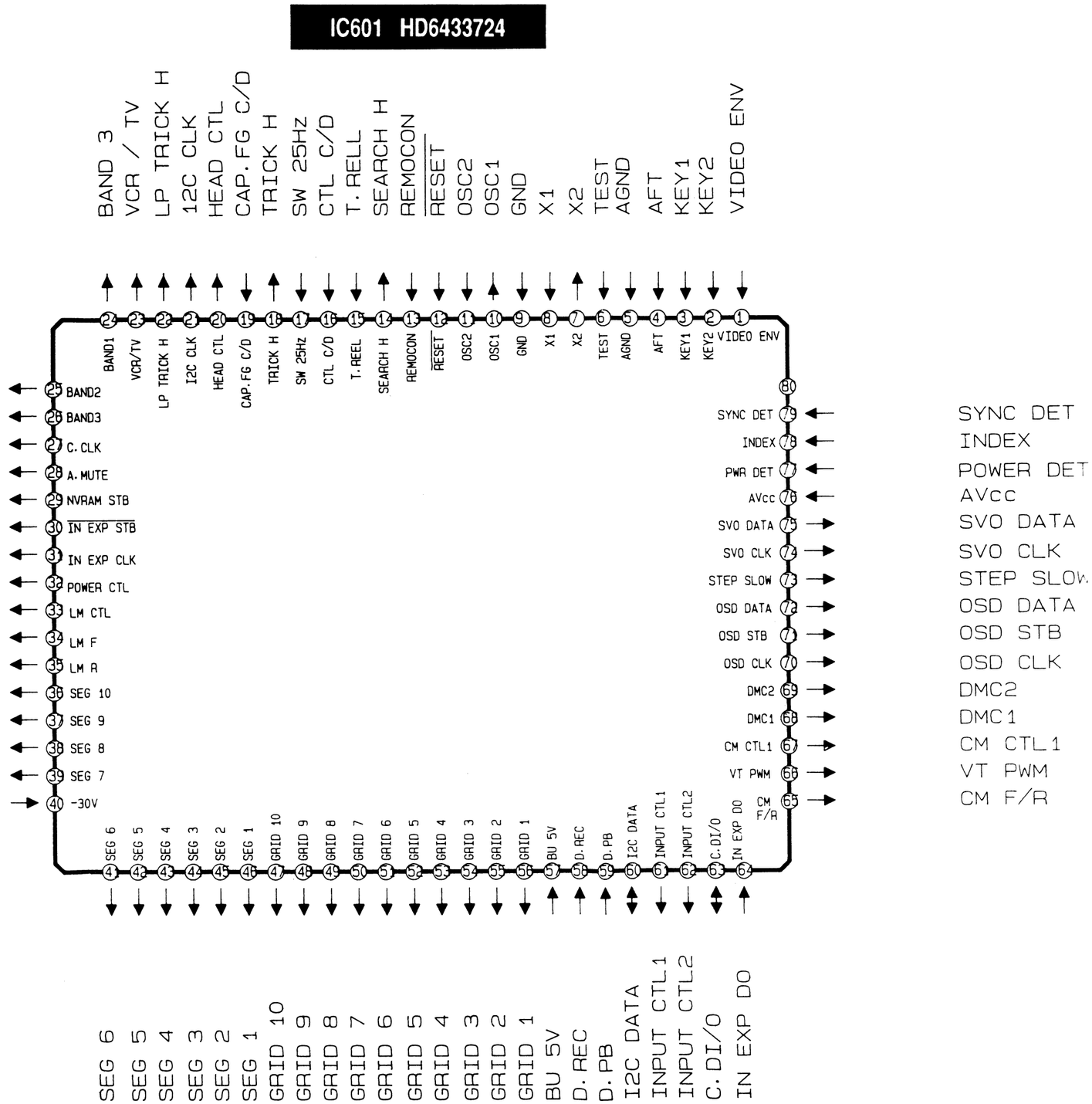
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the 'electrostatically sensitive (E.S) devices' section of this service manual.

SYSTEM CONTROL

IC601							
MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
1	-	0	2.5	41	-28	-28	-28
2	4.5	4.5	4.5	42	-28	-28	-28
3	4	4	4	43	-28	-28	-28
4	4.8	4.8	4.8	44	-28	-28	-28
5	0	0	0	45	-28	-28	-28
6	0	0	0	46	-28	-28	-28
7	1.4	1.4	1.4	47	-28	-28	-28
8	0.8	0.8	0.8	48	-28	-28	-28
9	0	0	0	49	-28	-28	-28
10	2.3	2.3	2.3	50	-28	-28	-28
11	2.5	2.5	2.5	51	-28	-28	-28
12	5	5	5	52	-28	-28	-28
13	5.2	5.2	5.2	53	-28	-28	-28
14	0	0	0	54	-28	-28	-28
15	0/5	0/5	0/5	55	-	-	-
16	0/5	0/5	0/5	56	-	-	-
17	0.5	0.5	0.5	57	5	5	5
18	0	0	0	58	5	5	5
19	5	0/5	0/5	59	0	0	0
20	0	0/5	0/5	60	5	5	5
21	0	0	0	61	0	0	0
22	0	0	0	62	0	0	0
23	5	5	5	63	0/5	0/5	0/5
24	5	5	5	64	0/5	0/5	0/5
25	0	0	0	65	4.9	4.9	4.9
26	0	0	0	66	0/4.9	0/4.9	0/4.9
27	0	0	0	67	0.1	4.6	4.6
28	5	5	0	68	1.2	1.4	1.4
29	0	0	0	69	1.2	1.4	1.4
30	5	5	5	70	0/4.9	0/4.9	0/4.9
31	5	5	5	71	0/4.9	0/4.9	0/4.9
32	5	5	5	72	0/5	0/5	0/5
33	5	5	5	73	0	0	0
34	5	5	5	74	0/5	0/5	0/5
35	5	5	5	75	0/5	0/5	0/5
36	-	-	-	76	5	5	5
37	5	5	5	77	5	5	5
38	5	5	5	78	5	5	5
39	5	5	5	79	0.3	0.3	0.3
40	-2.8	-2.8	-2.8	80	2.5	2.5	2.5

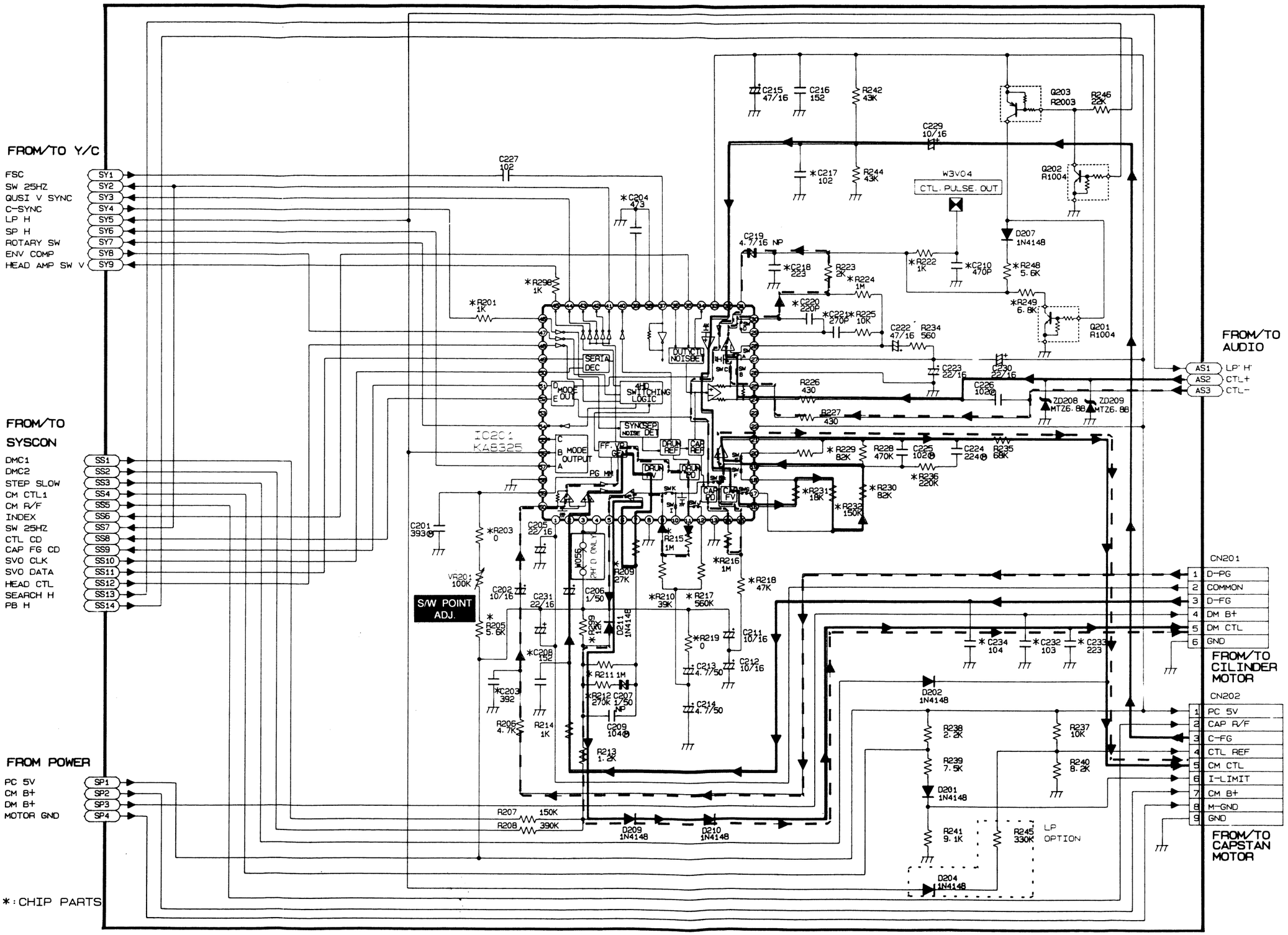
IC601 HD6433724



SERVO

9-4. Servo

RED ——— DRUM SPEED CTL
RED - - - - - - - - - - DRUM PHASE CTL
BLUE ——— CAPSTAN SPEED CTL
BLUE - - - - - - - - - - CAPSTAN PHASE CTL

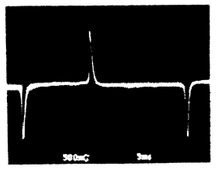


NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

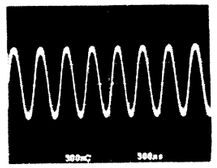
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

SERVO

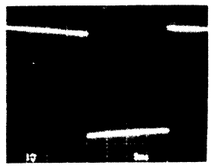
IC201							
MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
1	2.5	2.5	2.5	31	2.5	2.5	-
2	2.5	2.5	2.5	32	2.5	-	-
3	5	5	5	33	5.1	5.1	5.1
4	5	5	5	34	5	0/5	0/5
5	0.7	1.8	1.8	35	5	5	5
6	0.1	2.5	2.5	36	5	5	5
7	0.8	2.5	2.5	37	-	-	-
8	0	0	0	38	0	0	0
9	2.5	2.5	2.5	39	5	5	5
10	0	0	0	40	0/5	0/5	0/5
11	5	5	5	41	0/5	0/5	0/5
12	2.3	2.3	2.3	42	0/5	0/5	0/5
13	0	0	0	43	0/5	0/5	0/5
14	5.1	2.6	2.6	44	0	0	0
15	2.5	2.5	2.5	45	5	5	5
16	0.8	2.6	2.6	46	4.2	4.2	4.2
17	0.8	2.6	2.6	47	2.8	2.8	2.8
18	0.8	2.6	2.6	48	5	5	5
19	0.8	2.6	2.6	49	0.6/5	0.6/5	0.6/5
20	0	2.5	2.5	50	0.6/5	0.6/5	0.6/5
21	0	2.5	2.5	51	5	5	0/5
22	5.1	5.1	5.1	52	5	5	0/5
23	0	0	0	53	0	0	0
24	2.5	-	2.5	54	0/5	0/5	0/5
25	2.5	-	2.5	55	0	0	0
26	0	0	0	56	0	0	0
27	2.5	2.5	2.5	57	5	5	5
28	2.5	2.5	2.5	58	0	0	0
29	2.5	2.5	-	59	-	-	-
30	2.5	2.5	-	60	2.5	2.5	2.5



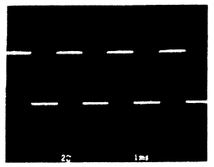
IC201-31
1.3Vp-p
PB



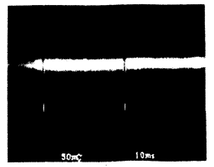
IC201-32
1.8Vp-p
PB



IC201-41
5Vp-p
PB

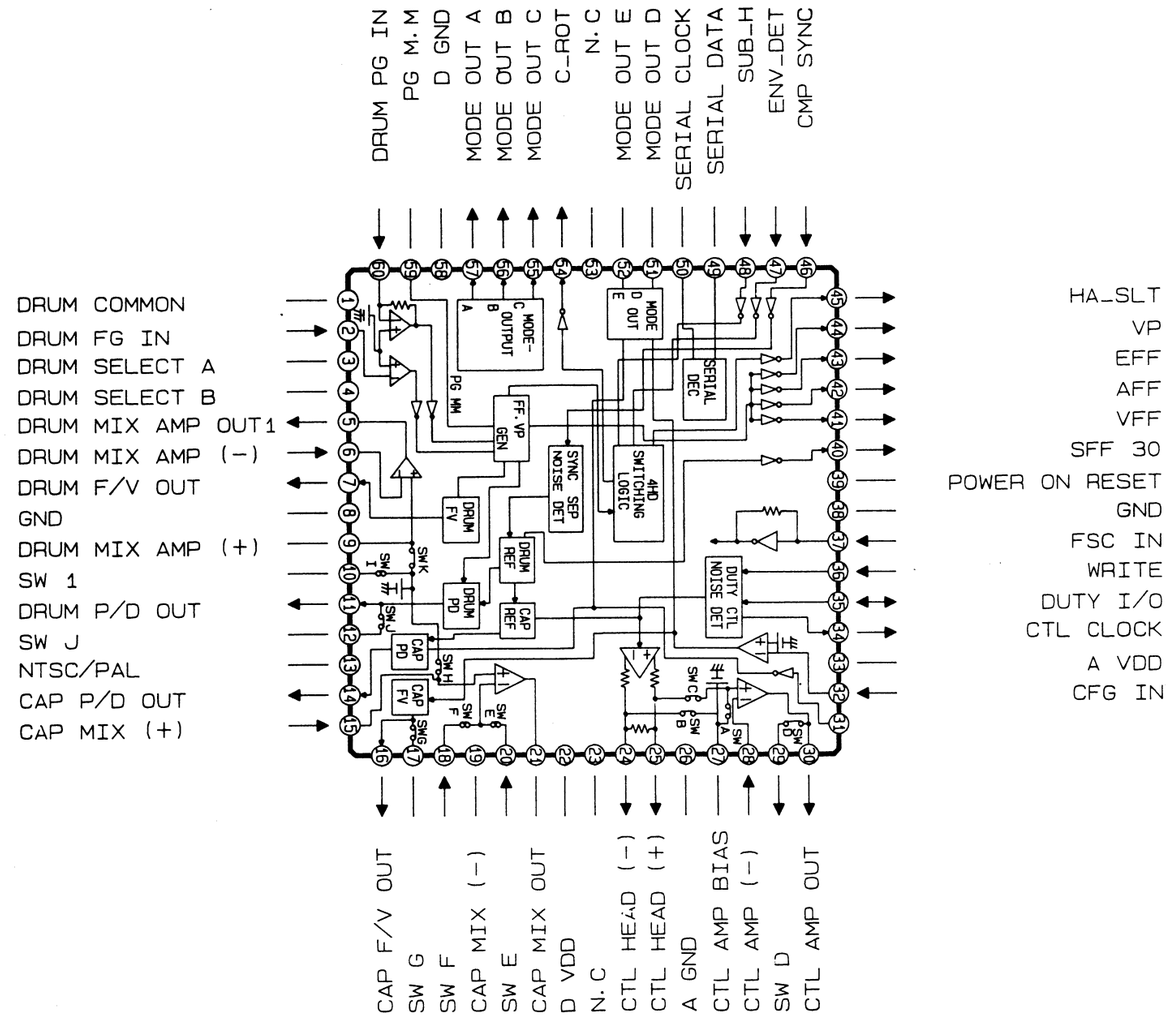


IC201-51
2.5Vp-p
PB



IC201-60
130mVp-p
PB

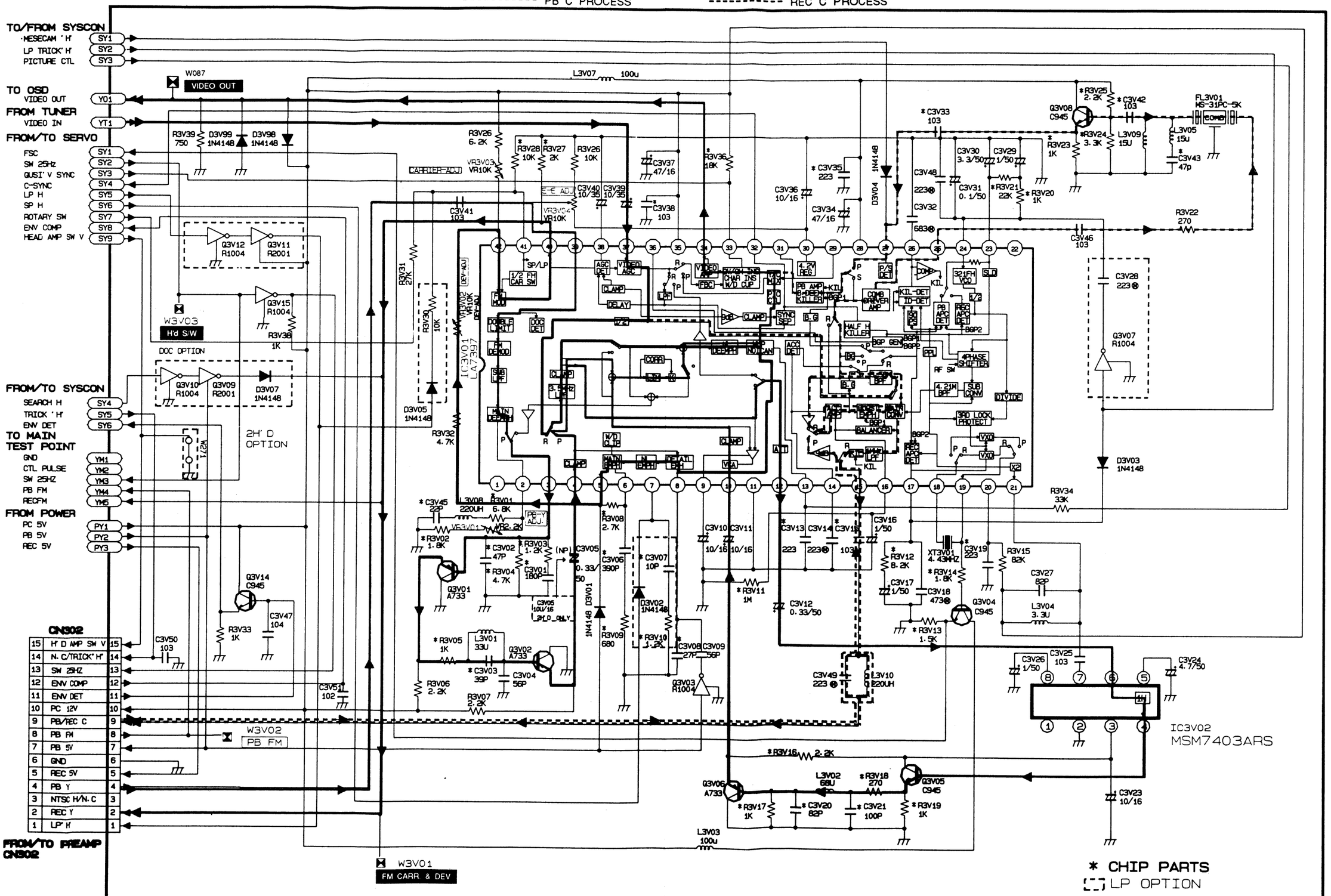
IC201 KA8325



LUMA/CHROMA

9-5. Luminance/Chrominance

RED ——— PB Y PROCESS ---------- PB C PROCESS BLUE ——— REC Y PROCESS ---------- REC C PROCESS

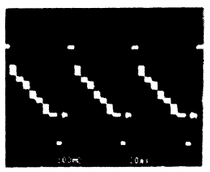


NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

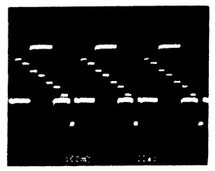
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

LUMA/CHROMA

IC3V01							
MODE / PIN NO	STOP	REC	PLAY	MODE / PIN NO	STOP	REC	PLAY
1	-0.8/0.2	0	0/4	22	0	0	0
2	0	0	-	23	1.9/2.3	2.1	3.4
3	1.8/2.2	2	-	24	1.9/2.3	2.1	3.4
4	2.5/2.9	2.7	-	25	2.1/2.5	2.3	-
5	2.5/2.9	2.6	4.5	26	1.8/2.2	2	2
6	2.5/2.9	2.6	4.5	27	1.8/2.2	2	2
7	4.5/4.9	4.7	4.5	28	4.8/5.2	5.1	5.1
8	1.7/2.1	1.9	-	29	0	0.1	0.1
9	2/2.4	2.2	3.3	30	3.9/4.3	4.1	4.1
10	1.9/2.3	2.1	-	31	2.5/2.9	2.5	2.2/2.8
11	-0.8/0.2	0	0	32	4.1/4.5	4.3	0.2/4.8
12	1.2/2	1.8	-	33	-0.8/0.2	0.1	0.1
13	3/3.4	3.2	3.2	34	0.8/2.2	2.1	-
14	0.8/1.2	1	2.1	35	4.8/5.2	4.9	4.9
15	2.7/3.1	2.9	3	36	1.2/1.4	1.2	0.2/4.2
16	1.5/1.9	1.7	2.3	37	3/3.4	3.2	3.2
17	1.3/1.7	2.3	2.3	38	1.5/2	1.5	1.5
18	3/4.2	3.2/4.1	3.2/4.1	39	3/3.5	3.4	3/3.7
19	2.9/3.9	2.8/3.8	1.9/3.8	40	2.2/3.8	2.5/3.5	3.5
20	2/2.4	2.2	2.2	41	0/1.4	0/1.4	0/1.4
21	4.8/5.2	4.8/5.1	4.7/5.1	42	2.4/2.6	2.4	2.4

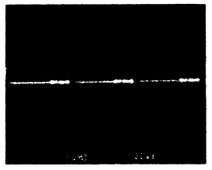


IC3V01-10
0.5Vp-p
E-E/REC

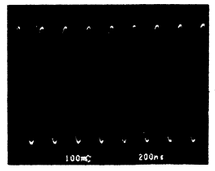


IC3V01-10
0.4Vp-p
PB

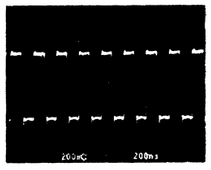
IC3V01-15
Burst - 170mVp-p
E-E/REC



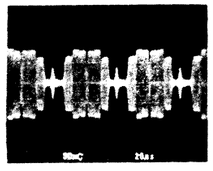
IC3V01-15
Burst - 70mVp-p
PB



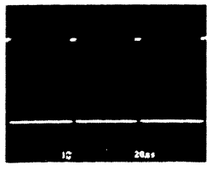
IC3V01-19
600mVp-p
E-E



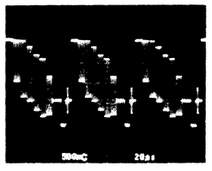
IC3V01-19
400mVp-p
PB



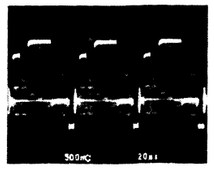
IC3V01-27
Burst - 80mVp-p
PB



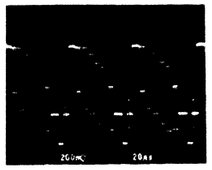
IC3V01-32
4.2Vp-p
PB/REC



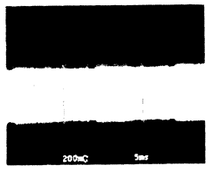
IC3V01-34
2.1Vp-p
E-E/REC



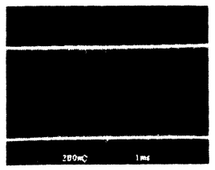
IC3V01-34
2.1Vp-p
PB



IC3V01-37
1.0Vp-p
E-E/REC

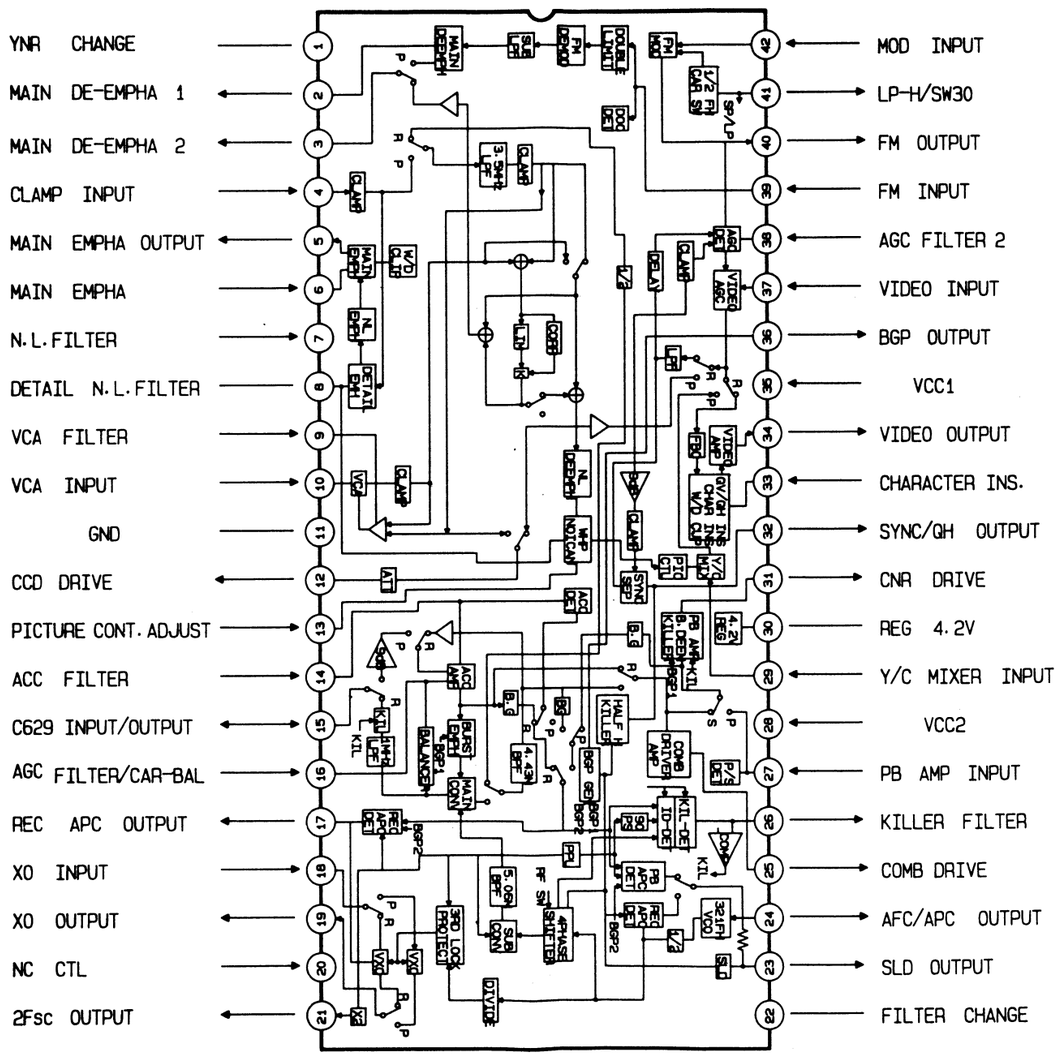


IC3V01-39
500mVp-p
PB



IC3V01-40
1.0Vp-p
E-E/REC

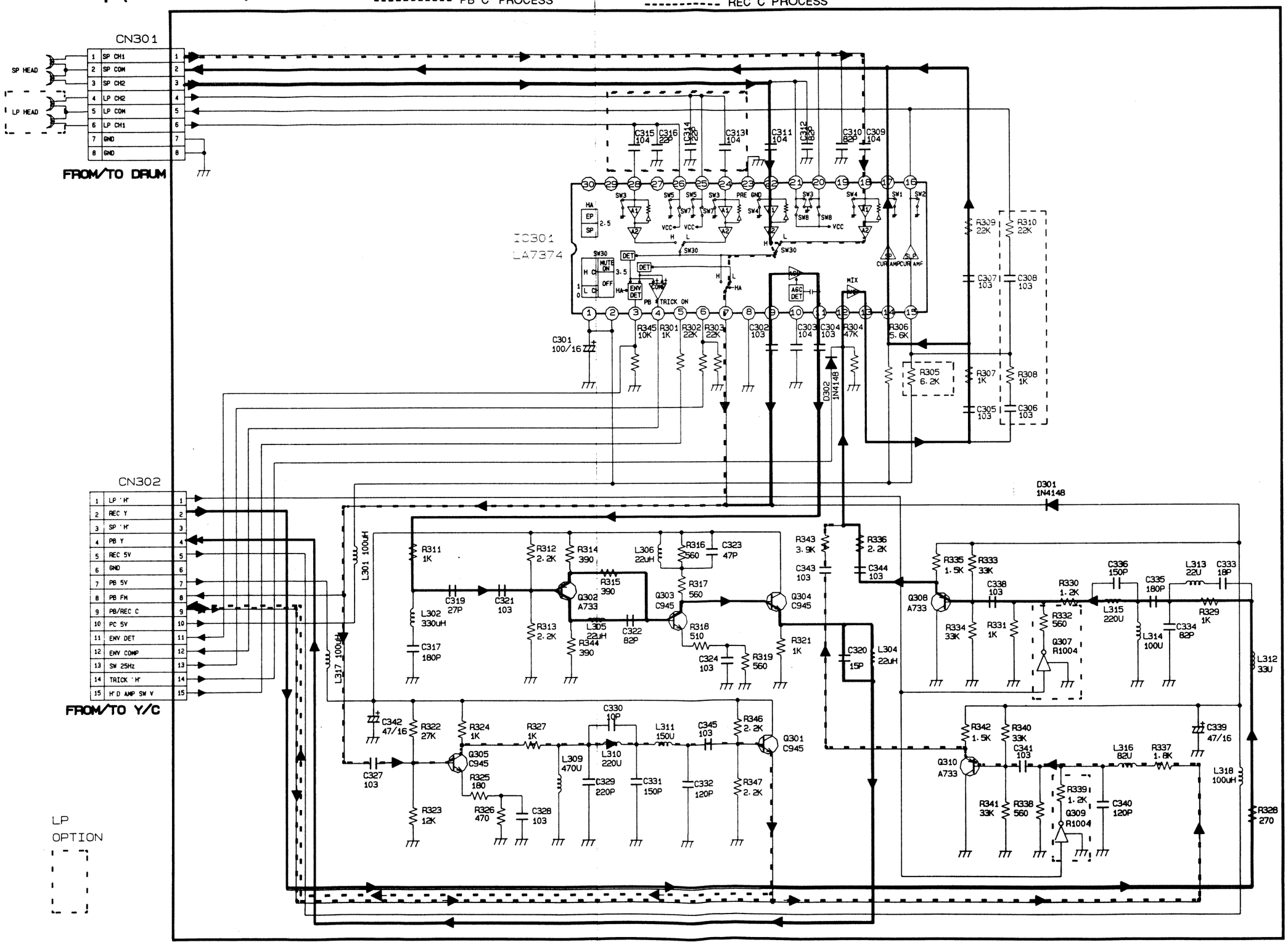
IC3V01 LA7397



PRE-AMP

9-6. Pre-Amp (VXK-306/307)

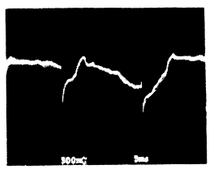
RED ——— PB Y PROCESS ---------- PB C PROCESS BLUE ——— REC Y PROCESS ---------- REC C PROCESS



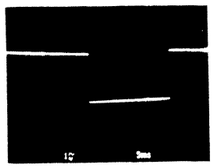
NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

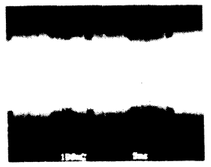
IC301			
MODE / PIN NO	STOP	REC	PLAY
1	5.0	5.0	5.0
2	5.0	5.0	5.0
3	1.2	0	3.6
4	2.8	2.8	2.8
5	0	0	0
6	0	0/2.6	0/2.6
7	1.6	4.6	1.6
8	0	0	0
9	3.6	3.4	3.6
10	0.8	0	1.0
11	2.5	4.0	2.5
12	1.8	1.7	1.8
13	0	2.0	0
14	1.6	2.0	1.6
15	1.6	1.6	1.6
16	0	0	0
17	0	4.0	0
18	0.7	0	0.7
19	0	0	0
20	0	4.0	0
21	0	4.0	0
22	0.7	0	0.7
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0



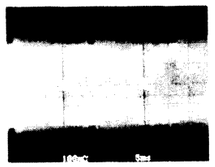
IC301-3
DC 3.5V
PB



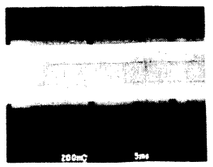
IC301-6
2.5Vp-p
PB



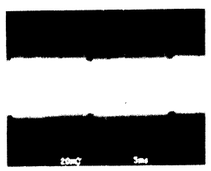
IC301-7
300mVp-p
PB



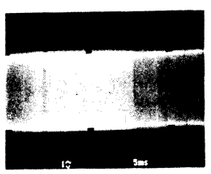
IC301-11
400mVp-p
PB



IC301-13
0.6Vp-p
REC



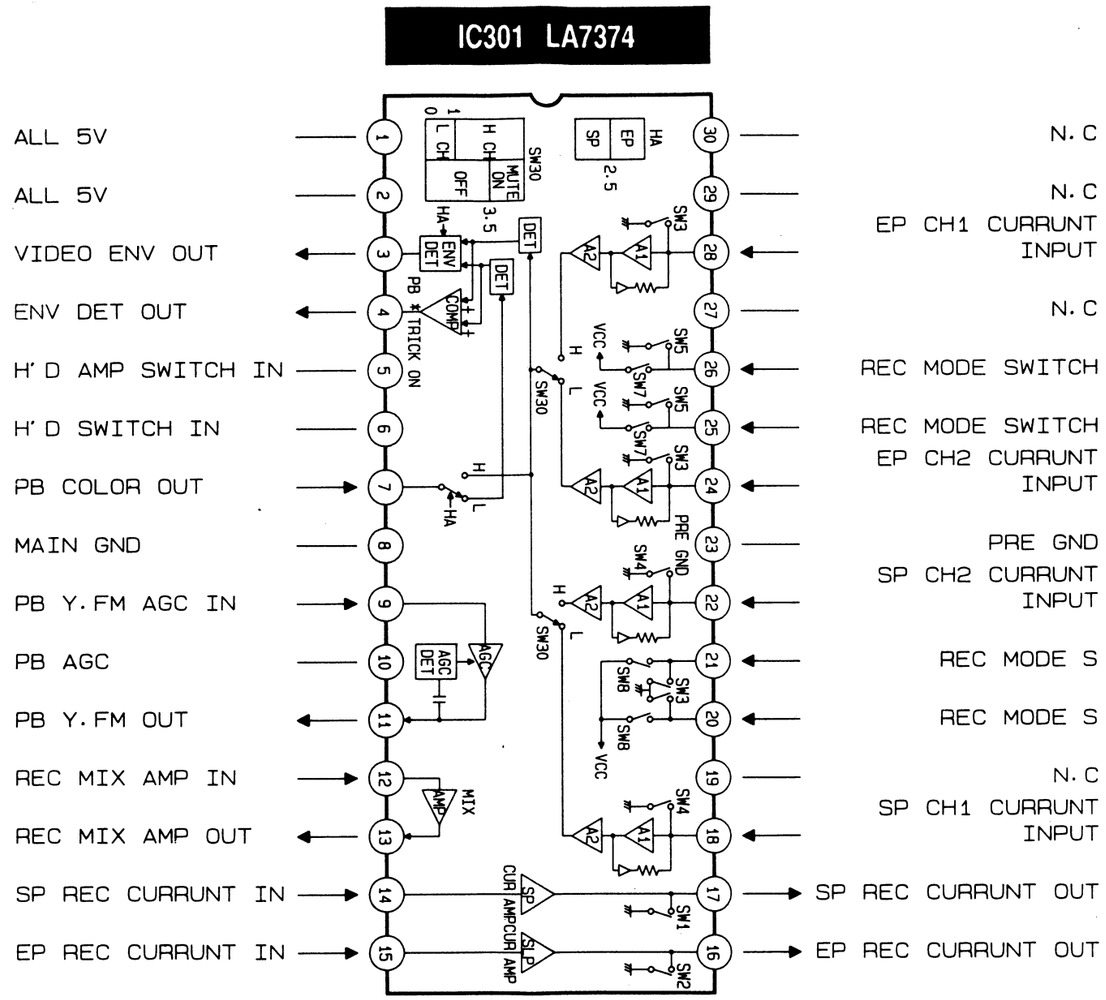
IC301-14
60mVp-p
REC



IC301-17
3.6Vp-p
REC

PRE-AMP

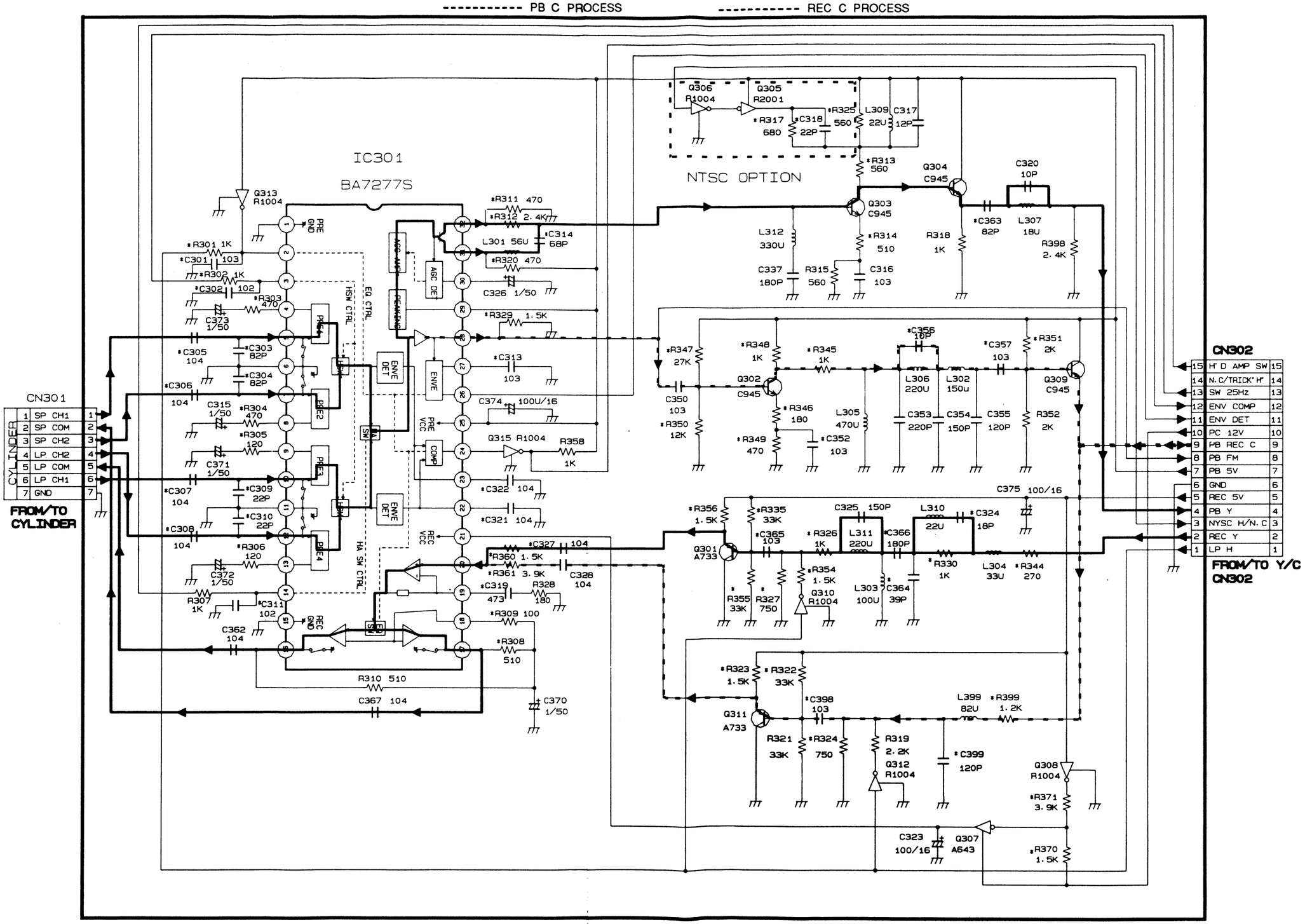
IC301 LA7374



PRE-AMP

9-7. Pre-Amp (VXK-336/337)

RED ——— PB Y PROCESS
RED - - - - - - - - - - PB C PROCESS
BLUE ——— REC Y PROCESS
BLUE - - - - - - - - - - REC C PROCESS

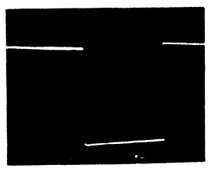


NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

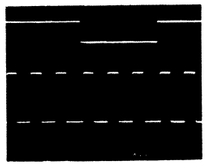
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) device" section of this service manual.

*:CHIP PARTS

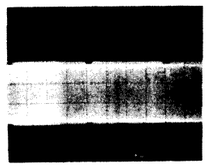
IC301			
MODE / PIN NO	STOP	REC	PLAY
1	0	0	0
2	0	0	0
3	SW 25HZ		
4	0	0	0.8
5	0	0	0.65
6	0	0	0
7	0	0	0.65
8	0	0	0.8
9	0	0	0.8
10	0	0	0.65
11	0	0	0
12	0	0	0.65
13	0	0	0.8
14	0	0	4.45
15	0	0	0
16	0	6.15	0
17	0	6.4	0
18	0	6.1	0
19	0	6.1	0
20	0.2	6.8	0
21	0	12.0	0.35
22	0	0	2.45
23	0	0	2.8
24	0	0	3.9
25	0	0	5.0
26	0	0	3.8
27	0	0	2.8
28	0	0	2.9
29	0	0	5.0
30	0.2	0	3.3
31	0	0	3.45
32	0	0	1.6



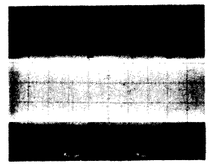
IC301-3
5Vp-p
PB/REC



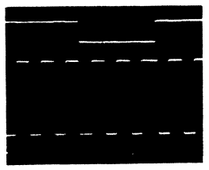
IC301-14
5Vp-p
SEARCH



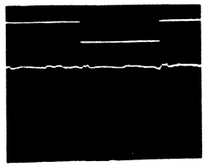
IC301-17
3Vp-p
REC-SP



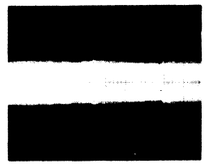
IC301-20
150mVp-p
REC-SP



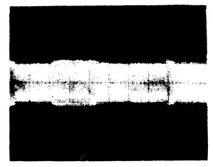
IC301-24
3.8Vp-p
SEARCH



IC301-26
DC 3.8Vp-p
PB



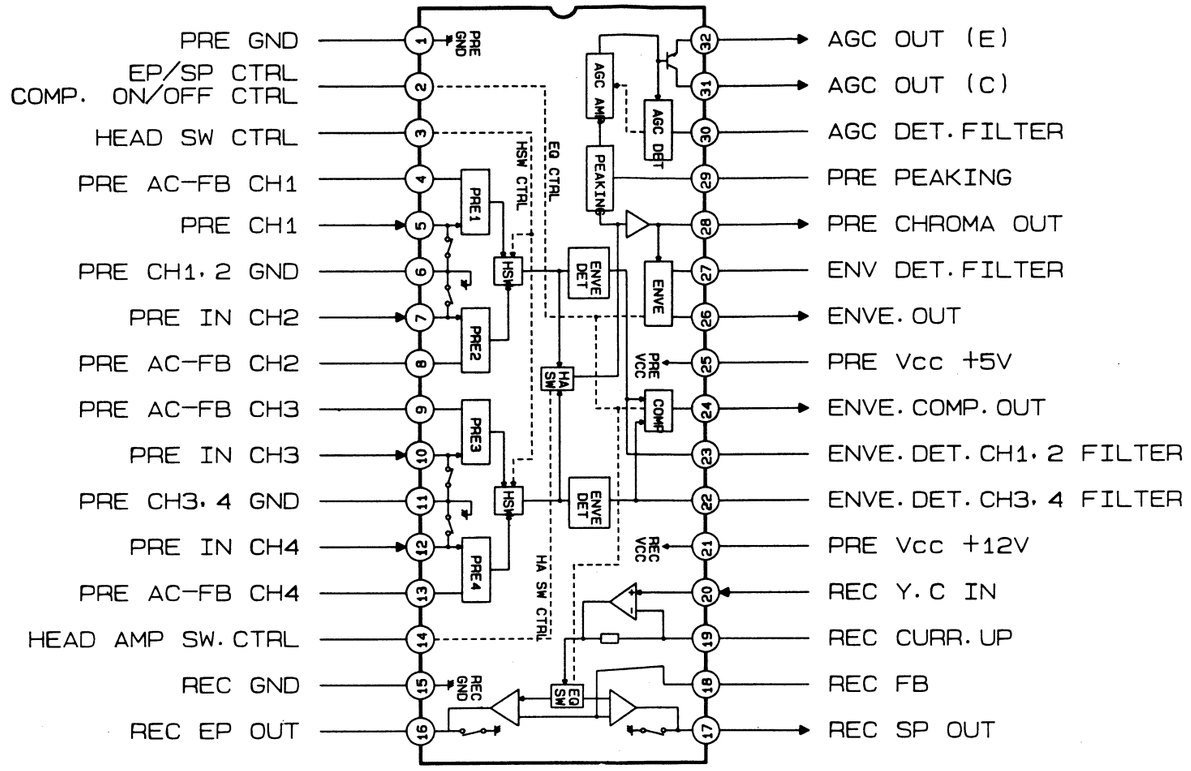
IC301-28
400mVp-p
PB-SP



IC301-32
200mVp-p
PB-SP

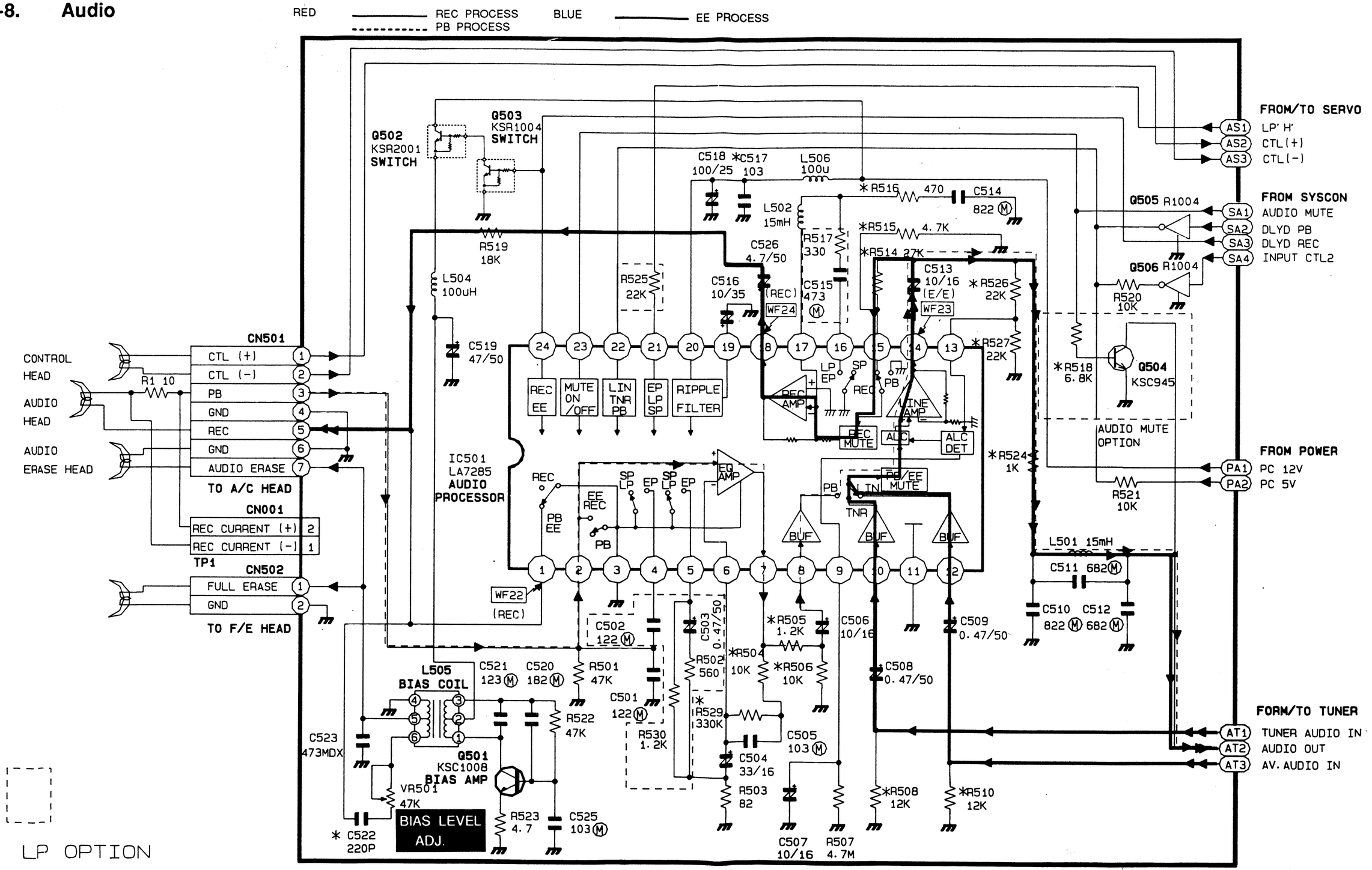
PRE-AMP

IC301 BA7277S



AUDIO

9-8. Audio



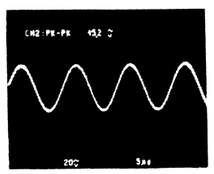
LP OPTION

*CHIP PARTS

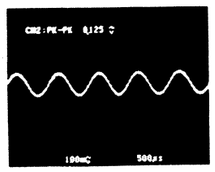
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

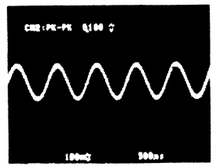
IC501			
MODE / PIN NO	STOP	REC	PLAY
1	0	-24/+24	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0.5	0.5	0.5
7	4.1	4/4.6	4/4.6
8	5.3	5/5.6	5/5.6
9	0	0	0
10	5.3	5.3	5.3
11	0	0	0
12	5.3	5.3	5.3
13	0	0	-0.4/0.4
14	5.3	5.3	4.4/5
15	0	0	0
16	0	0	0
17	1.6	1.6	1.6
18	5.3	5.3	5.3
19	12	12	12
20	12	12	12
21	0	-0.6/0.6	0
22	4.6	4.6	0
23	4.6	4.6	0
24	0	4.6	0



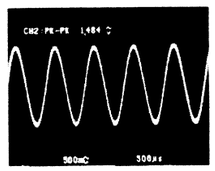
IC501-1
45Vp-p
REC



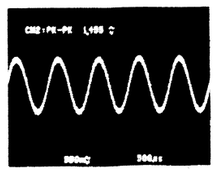
IC501-8
0.125Vp-p
PB



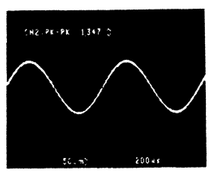
IC501-10,12
0.2Vp-p
E-E



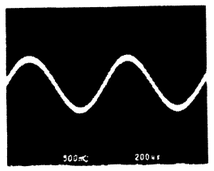
IC501-14
1.5Vp-p
E-E/REC



IC501-14
1.5Vp-p
PB



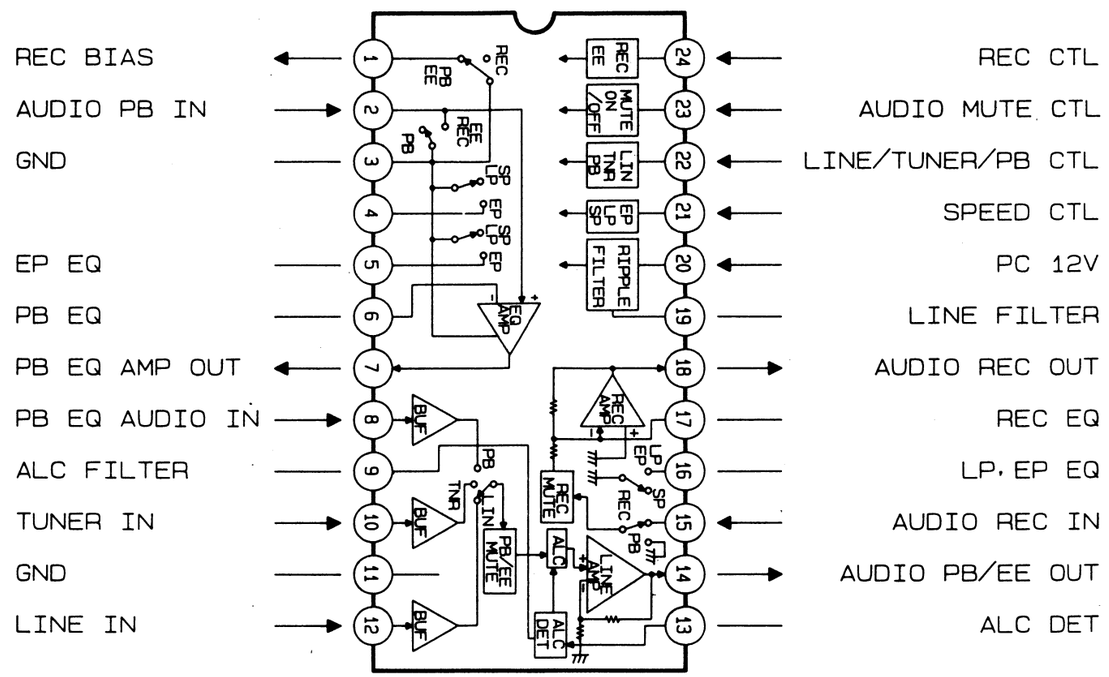
IC501-18
1.3Vp-p
E-E



IC501-18
1.5Vp-p
REC

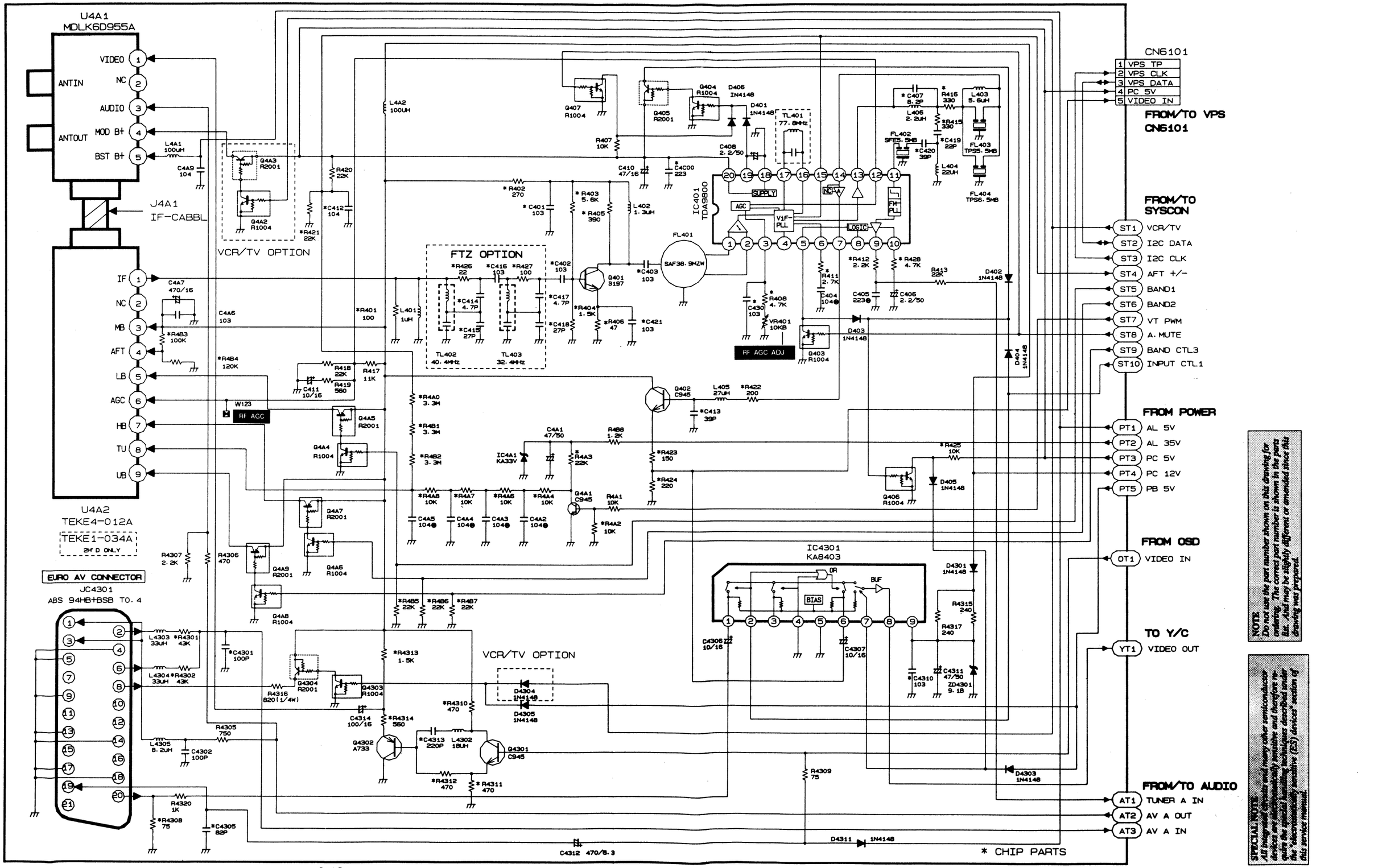
AUDIO

IC501 LA7285



TUNER

9-9. Tuner

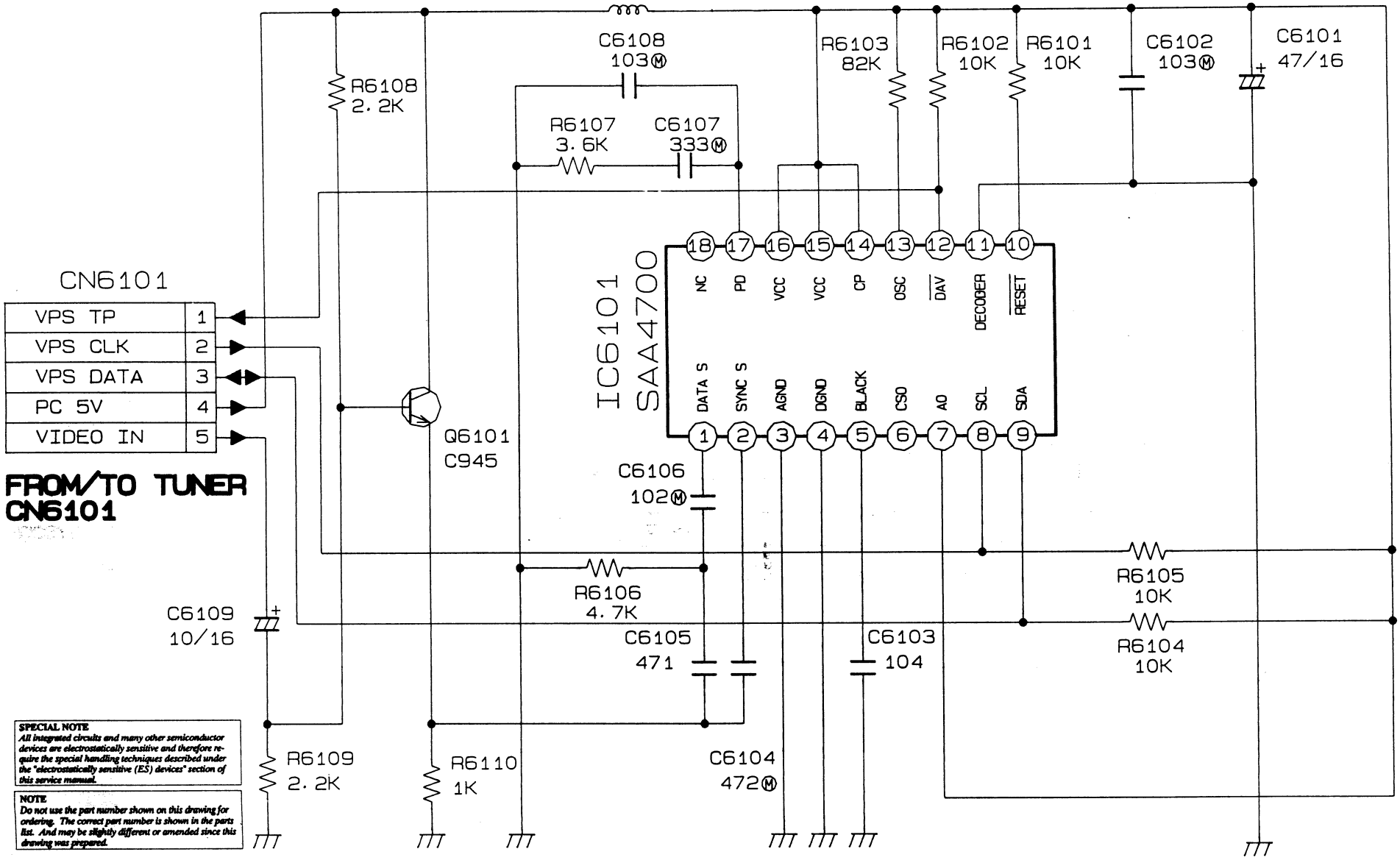


NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require special handling techniques described under the "electrostatically sensitive (ES) device" section of this service manual.

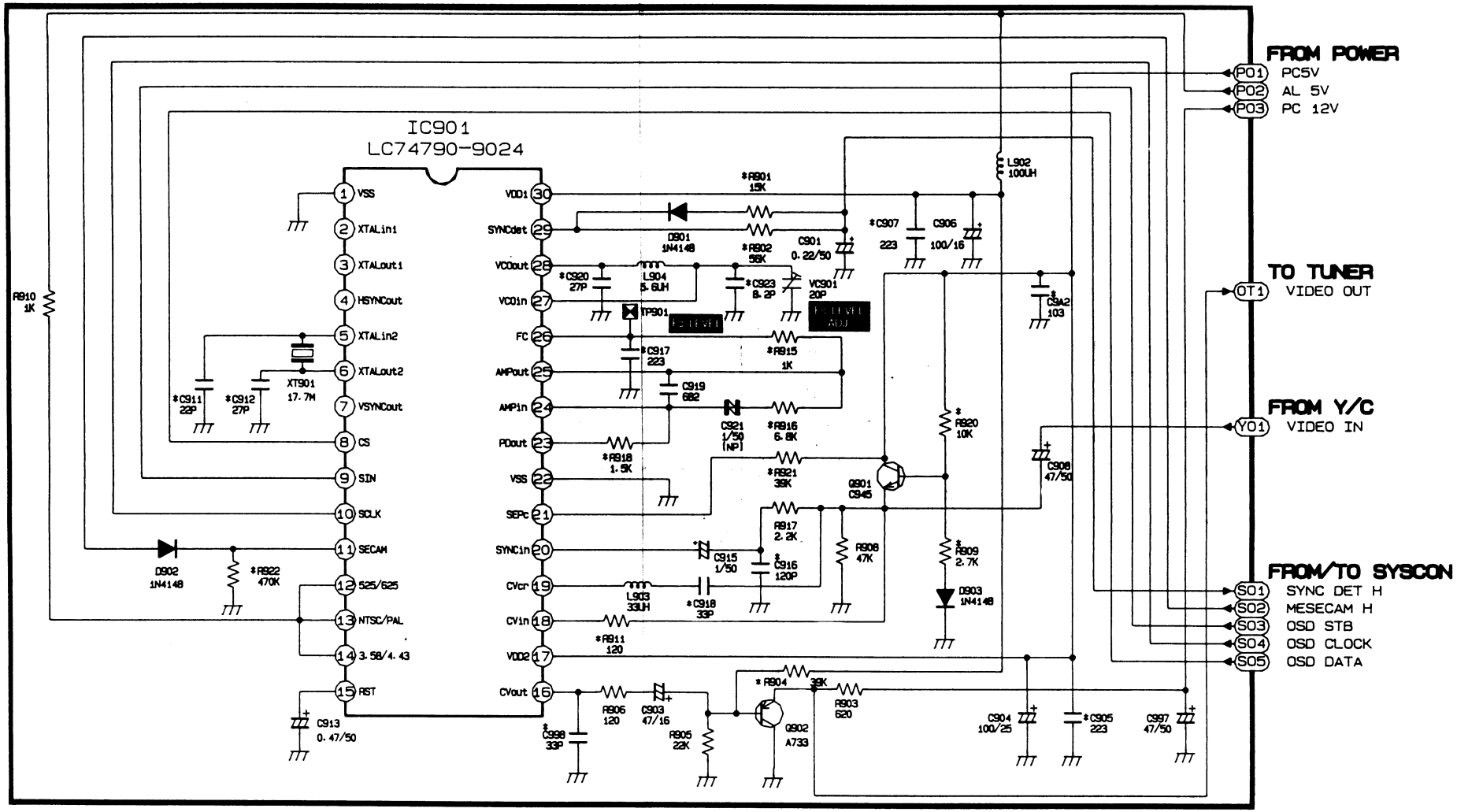
9-10. V.P.S (OPTION)

V.P.S



O.S.D

9-11. O.S.D



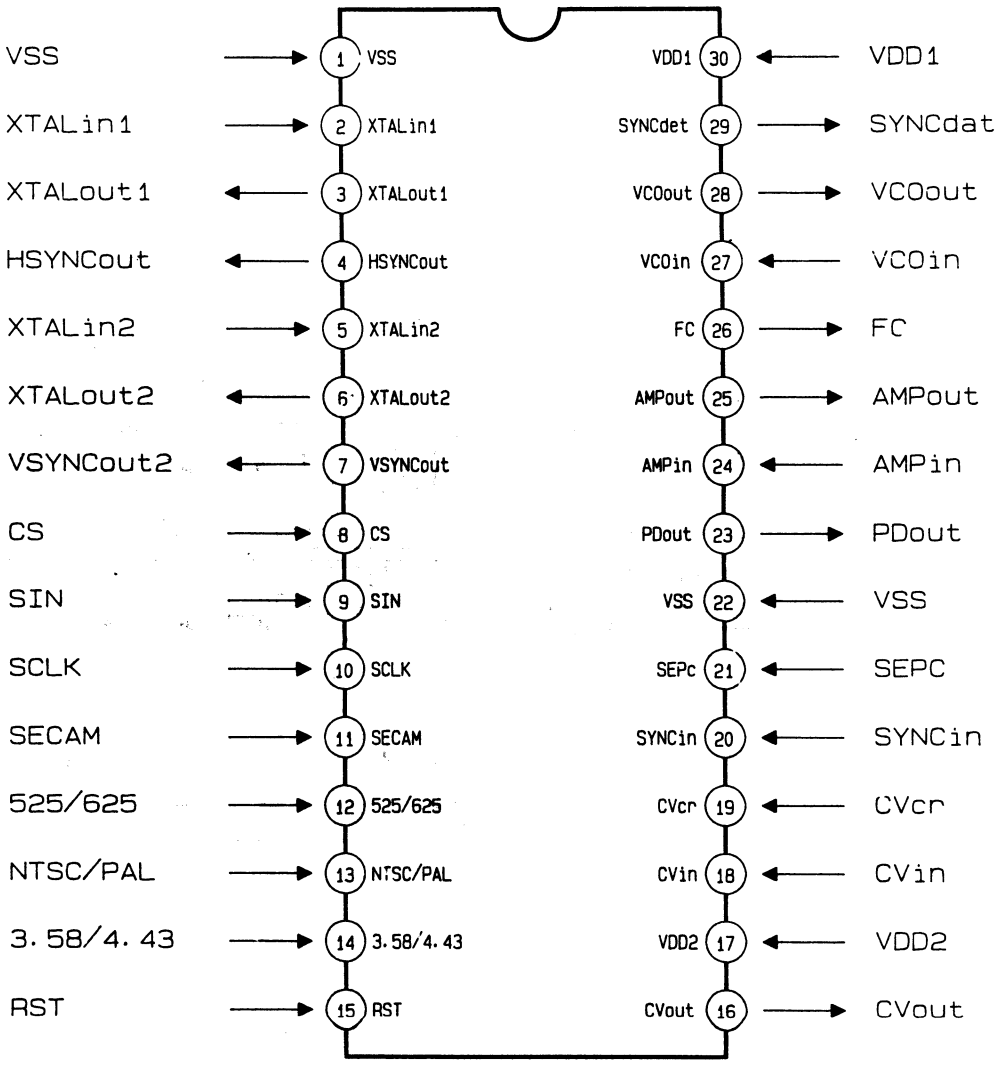
SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

O.S.D

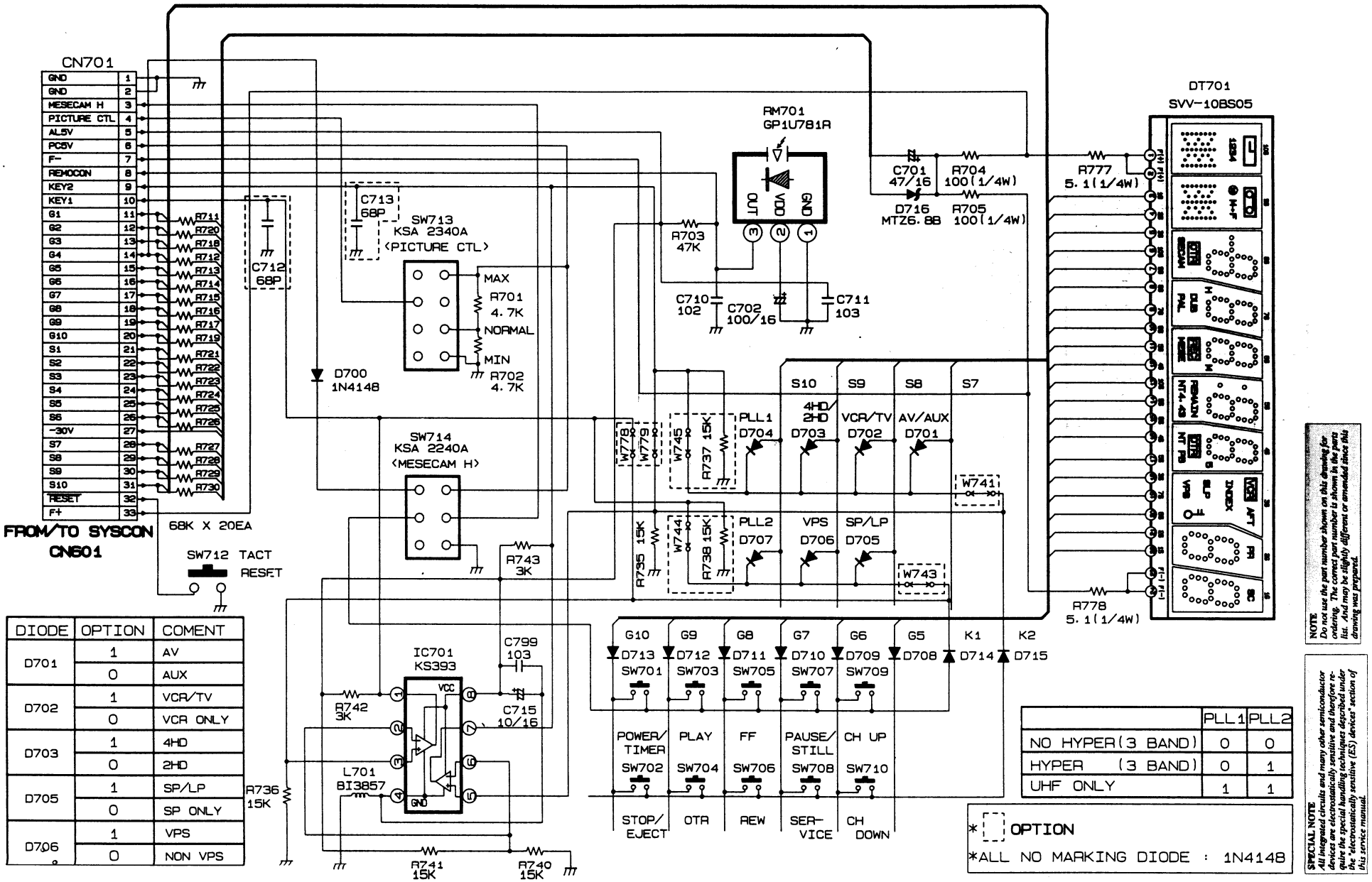
IC901		
MODE / PIN NO	SIGNAL OUT	BLUE OUT
1	0	0
2	4.6	4.6
3	5.2	5.2
4	0/5.2	0/5.2
5	2/2.5	2/2.5
6	2/3.1	2/3.1
7	0/5.2	0/5.2
8	5.1	5.1
9	0	0
10	5.1	5.1
11	5.2	5.2
12	5.2	5.2
13	5.2	5.2
14	5.2	5.2
15	5.2	5.2
16	-	-
17	5	5
18	-	1.2
19	-	0
20	1.9/4	0
21	2	2
22	0	0
23	0.2/5	0.1/5.1
24	2/2.6	1.1/4.3
25	2.9/3.8	-0.2/5.2
26	3/3.6	1.1/3.2
27	1.2/3.4	1.1/3.2
28	1.2/3.4	1.1/3.2
29	5/5.5	0/5.2
30	5/5.6	5.2

IC901 LC74790-9024



FUNCTION/TIMER

9-12. Function/Timer



DIODE	OPTION	COMENT
D701	1	AV
	0	AUX
D702	1	VCR/TV
	0	VCR ONLY
D703	1	4HD
	0	2HD
D705	1	SP/LP
	0	SP ONLY
D706	1	VPS
	0	NON VPS

	PLL1	PLL2
NO HYPER(3 BAND)	0	0
HYPER (3 BAND)	0	1
UHF ONLY	1	1

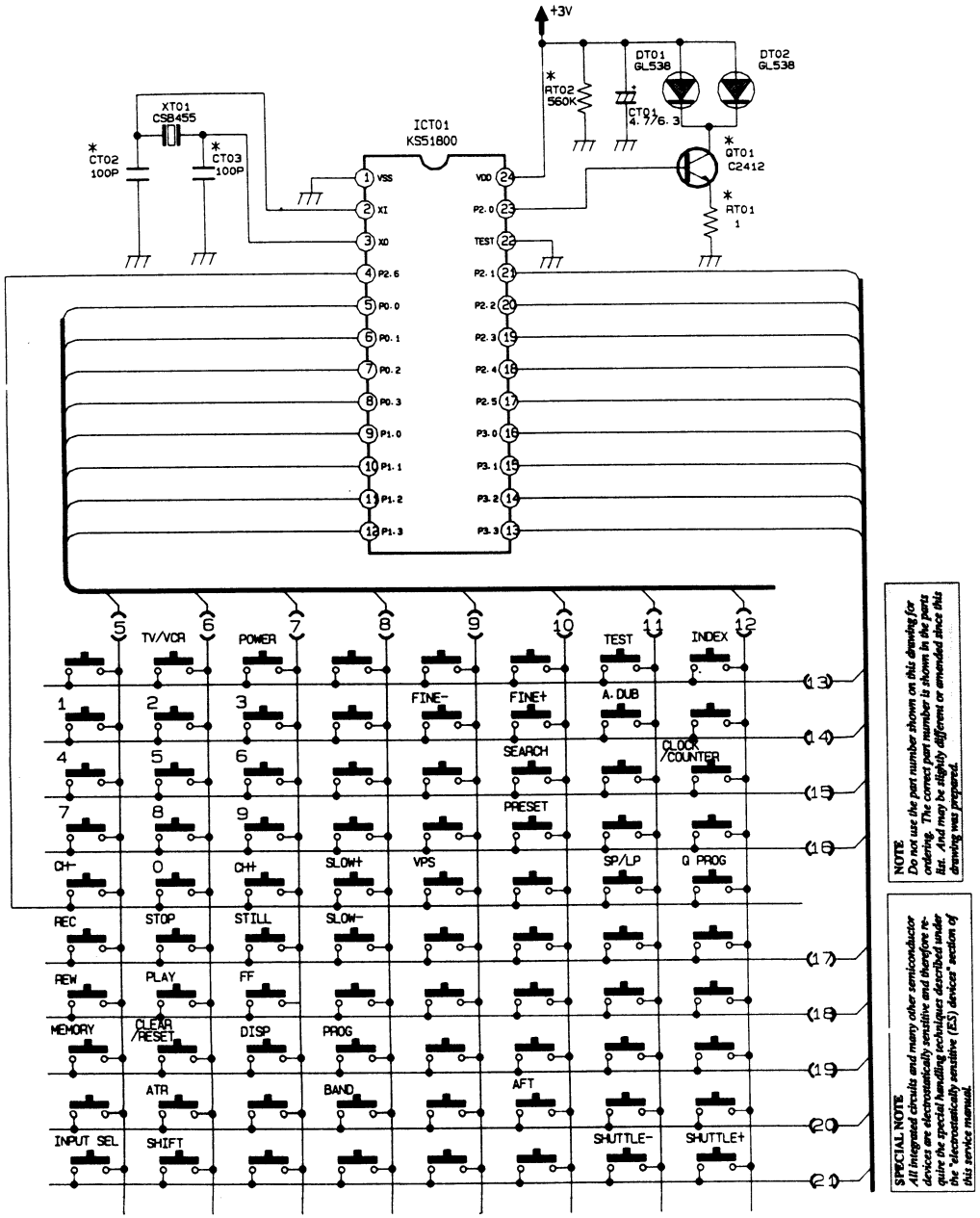
* [ ] OPTION

*ALL NO MARKING DIODE : 1N4148

NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

9-13. Remote Control



NOTE
Do not use the part number shown on this drawing for ordering. The correct part number is shown in the parts list. And may be slightly different or amended since this drawing was prepared.

SPECIAL NOTE
All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the 'electrostatically sensitive (ES) devices' section of this service manual.